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*Ault, G. W. & Madigan, E. P.: Am. J. Surg., 77:352, 1949.

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The Circus

JOSEPH HALTON, M.D.
SARASOTA

It is always a great day when the Circus comes to town. When the Ringling Brothers Circus came to our town, it had come to stay for it had moved its Winter Quarters from Bridgeport, Conn., to Sarasota. The real estate fellows needled themselves with dreams of future sales. To them it was the promised day of Israel. The Circus is an industry. It has a payroll. Thirty thousand people visit the Winter Quarters each year.

There were originally five Ringling brothers and one sister. Alf, John and Charles were patients of mine. All are now dead. Alf was the real circus brains, a stickler for proper conduct, a fanatic on the morals of the personnel. Charles was the sharp intellectual type, John the exhibitionist.

My contact with the Circus came through the illness of the orangutans. They were dying rapidly. I made twenty postmortem examinations. They all died from tuberculosis. The orangutans are stupid, surly animals. You have to be ever on your guard as their little trick is to grab you, or any other monk, by the hand and bite off the fingers.

Miss Congo was the first gorilla with whom I came in contact. When Professor Yerkes of the Peabody Institute of Yale came to Sarasota to make studies on the intelligence of Miss Congo, I had a happy time with him. In one test we hung bananas in the top of the cage. With a series of blocks, Miss Congo would build an arrangement whereby she could attain the height necessary to reach the bananas. When she died, I sent her brain to Carnegie Institute for a study of comparative anatomy with the brain of a girl 16 years of age. My findings are recorded in Professor Yerkes' book entitled "Almost Human." From Miss Congo, I went to John's favorite chimpanzee, which he kept at his Italian villa. This chimpanzee died of tuberculosis.

Read before the Florida Medical Association, Seventy-Fifth Annual Meeting, Belleair, April 12, 1949

Then came the gorilla—Gargantua. He was the meanest creature of them all and for good reason. To get even with the first mate of an ocean liner for some ill treatment a sailor thought he had received, the sailor threw a cup of nitric acid into the face of Gargantua, which act accounts for Gargantua's distorted smile. Answering a call to the Winter Quarters to see Gargantua, who attendants thought was dying with dysentery, I took a 4 ounce bottle of paregoric and bismuth mixture. I always made 5 gallons of this mixture for the traveling doctor to take along when the Circus went on the road. This prescription I got from Dr. Steele, who had traveled with the Circus for thirty years.

There lay Gargantua limp as a rag, flat on his back with his head between the iron bars of his cage. I slowly poured the whole four ounces of Dr. Steele's favorite prescription down his throat. Not a pleasant job, as this brute had a lightning sweep of his paws that you could not dodge. John Ringling North found this out; I stitched up John North, and he stayed away from Gargantua. Gargantua did not die, or here my story would end. Six months later, I strolled to the cage. When he saw me, he reared up full height and fastened those mesmerizing eyes upon me. It was time for his loaf of raisin bread and quart of milk. So I fed him. He put on no act with me. When kindness has been shown to animals, there is some peculiar mental reaction between them and human beings.

The Psychology of the Circus

The attendance of the Circus is a study in mob psychology. People want to herd up or be with others of the tribe. They want to see how the other fellow acts when herded together with his kind. They are looking for different pastures. They want a change. On analysis, they want to see that fellow at the top of the tent take a chance

on breaking his neck. If he misses his count by a split second, his is a blackout. The crowd has had a thrill. Some are shocked. Others have had a Roman holiday. Let a Lillian Leitzel fall from the Big Top today and the show will play to a packed tent for the next two months. It will be interesting to this observer to note the gate attendance when the Circus returns to the state of Connecticut where the terrible fire occurred.

The Personnel of the Circus

The Great Loyal Rapenskeys, the Reffinacs, the Wallendas, the Lillian Leitzels, and many of the artists are not the course type of stake drivers that many people may think. They have a royalty of their own; seldom do they marry outside their class. Many date their ancestors to Queen Antoinette. The large percentage are foreign-born. Many of the men have seen service with the French Foreign Legion. They speak two or three languages and are well read. Their long life in contact with the public has made kindness a great virtue. Their sympathy for each other in time of need pulls the heartstrings of the thoughtful. They have large families and are devout Catholics. They are natural troubadours. No dirty gypsies in their society. No confidence men. They detest a phony. Phony is a word they use to express their disgust for make-believe persons. You see, their lives are real and they are keenly alive to anything that might cause someone to miss the count whether he be on the trapeze, in the tumbling act or in the daily walks of life. When mistakes are made, their generosity in forgiving would please the heart of a saint. They will leave the Big Top, but they will return. The doctors who travel with the Circus are the type of physicians who react to the wanderlust that many times assails you and me. How often would you like to take the wings of the morning and fly to the uttermost parts of the earth? Last year, I asked the physician, "What kind of a season did you have; were there many accidents or deaths?" He replied, "About 15 deaths but few accidents." Most accidents occur with the roughnecks who do the manual work. They travel with the Circus—sort of camp followers. The Circus management tries to keep them from too much drinking. Impossible—drinking is their escape.

The death of Charles Ringling was a great loss to the Circus. He contracted virus pneumonia in Atlanta. He was convalescing when I called to make my dismissal visit. On arrival, the palatial home was empty. The family were in the swimming pool. In a chair was Charles, dying from what appeared to be an infarct. I pushed all the buttons, whistled and called. No answer. I threw a chair through a glass porch door; they all came running. Nothing attracts attention like broken and falling glass. John was next door. He came over. Charles died in a few hours. The family left the room except John and me. In the quietude that hung over the room, John said, "Joe, I am the last on the lot." If you do not understand that Circus phrase, you should be on the lot after the Circus has gone. It is a queer feeling. There are ghosts about. You think of Kipling's "The captains and the kings depart."

There are many experiences in the daily lives of the Circus people. Humor predominates in them all. Their laughter is spontaneous and infectious. When the Circus goes off the road, they have one week in Sarasota of goodbye parties and what a time. Too much drinking—no. Moderation to these people is just as true a sign of great men as excess is of weak men.

After the week ends, they start the repairs of clothing. The women have a fine art of needlework. The men attend to new acts and new rigging. The women used to make their own costumes; but the Circus has been modernized, and that task is assigned to the specialist. During the off season, away they go to all parts of the Western Hemisphere. Some are off to shrine circuses and winter fairs, others to various countries in South America and Cuba. In the spring they assemble in Madison Square Garden in New York a week before the opening. Many acts are assembled and the actors trained in the Winter Quarters at Sarasota many weeks before. The ballet teacher arrives. New costumes are fitted. Merle Evans is leading the band. The clowns are there. The elephants are in the Big Top. The rehearsal for the grand "Speck" (or spectacle) is taking shape. One is absent. Fred Bradna. He was the grand dominie who blew the whistle and cracked the whip for forty years. At the uplift of the hand, Merle Evans' band changes the tune from the "Blue Danube" to "A Hot Time in the Old Town" with never a missed beat. Fred Bradna is missing. The reason—while he was trying to save others, a tent pole fell across him, breaking both hips. They have done away with the whistle.

I Operate on an Elephant

It is said, "An elephant never forgets." I believe this to be true. If one does forget this incident, I certainly will not. Mr. Sam Gumpertz called me one day and said, "Dr. Joe, we have an elephant that is going to die. He represents about eight thousand dollars. We hate to lose him." Some months previously, the animal had had an abscess of his right shoulder. For a few weeks he had had another one at his right knee that needed opening. What should I take to cut through the hide of an elephant? I took every cutting tool I had.

On arrival, I found the preoperative preparations had been taken care of. The elephant had been well soaped, as had also the cement floor. Hay had been piled on the left side of him to lessen his fall when attendants applied the anesthetic by which he was to be under control. They had put a harness around his body which was connected to a three way block and tackle. Eight men began to pull. It was an impressive sight to see the strength of the elephant pitted against the ingenuity of man. How that animal braced himself against the pull. He enjoyed it. He did not rear or buck. He thought they could not do it. He, like a good sport, was willing for the try. They slipped one over on him. When they had him at the right angle, two fellows with stake sledge hammers knocked his feet from under him, and down he went on the hay where they fastened him prior to the operation.

While the anesthetic was being administered, I looked over the operating room and definitely picked the window through which I was going if anything about the paraphernalia busted. I tried to cut into the abscess. I had brought an old phalangeal saw. It was a saw that men in the past used to amputate the phalanges. From out of the past, I had the instrument to cut or saw through the elephant's hide. I needed a probe. We utilized bailing wire that was around a bale of hay. A 4 foot fistula extended from knee to shoulder. My hands gave out in laying wide this tract; so I had a couple of flunkies continue the cutting. We laid it open, washed it out with the hose, and the operation was finished. So was I. When I started to cut that elephant, he lay as still as a mouse. He certainly was a cooperative patient. Postoperative directions: wash the wound out with a hose daily. Results: anatomically 100 per cent; functionally 100 per cent; economically for me? You guess on an eight thousand dollar patient.

The Sex Life of the Hippopotamus

Little did the male hippo know his loved one was arriving on a flat car. Nor did I until they began bringing in the injured. After fixing up five men, I got the history. Monday was the day. The flunkies were sleeping off their week-end debauch, beneath the palm trees. It was a lovely, quiet, semitropical day. The moss floated lazily in the breeze. The palm trees nodded their heads in sleepy lullabies. Then, by way of prelude, with the whistle wide open, escaping steam, screeching brakes and blackened smoke, the railroad train delivered the bride. It must have been that once in this universe the wind blew both ways at the same time. Down went the iron fence around the pool. Crash went the wooden sides of the flat car. The flunkies were forthwith awake and in action. The fight they thought was on. The meddlers were in for treatment. One of the flunkies philosophized by stating, "That's what you get for messing up somebody else's fun."

The Black Panther

The fellow from the cathouse wanted to know if I would take an x-ray picture of his favorite cat. He thought she had lung trouble. "Sure, bring her in," said I. In due time, three nurses came running down the hall, one exclaiming, "Ye gods, Doctor, go see what they have on the elevator." I dern near fell down the shaft. This fellow had the biggest black panther I had ever seen. It was 6 feet long. I yelled, "What about him, Jim?" He said, "She is as good as a house cat." I placed three 14 x 17 cassettes under her and developed the film. Sure enough, she had lung trouble. Pneumonia. When I looked at those claws, I did not feel comfortable. The claws of the lion and the cats, as they call them, are very infectious. The foulest smelling abscess I ever opened, however, was from the bite of a camel.

His Majesty—the Camel

Three camels had dropped dead. I decided I would perform an autopsy on one, remove the stomach and take it to Dr. Herbert Mills, the pathologist, for examination. We removed the stomach in toto, especially ligating both ends securely. That was the sanest thing I ever did. The stomach weighed 80 pounds. It took a bunch of flunkies to get it into the rumble seat of my Henry Ford. We had wrapped it in a large piece of tent canvas and securely laced it with stout tent ropes. The day was hot. The roads to Tampa were not

as those of today. It is now 50 miles to Tampa; then, it was 90. We wound, twisted, and dodged pine trees all the way through loose and deep sand until the royal stomach began to think he was back in the desert. By now this specimen became a personal thing, who was by his stench and rapid distention in the hot July sun giving me personal combat. He was getting nasty. I thought of the poet, Robert Service, and his book, "The Spell of the Yukon" with the poem, "The Cremation of Sam McGee." Remember the struggle he had with the frozen corpse? So on the road to Tampa we went. He (the stomach) was in the rumble seat and in that hot July sun was storing up his flatus like an organ blower awaiting the first note before the curtain call.

At our destination, he, like many a puffed-up person, had expanded to all the nooks and crevices of the rumble seat. Extraction was impossible. I deflated his stinking highness with an ice pick. By this time, he had a real body odor that you could actually taste. Into the freezing compartment we placed him until the morrow. When I registered at the hotel, people around the desk and in the elevators began to examine the soles of their shoes. Dr. Mills opened the stomach, and there was the cause. Piercing the mucosa of the stomach were numerous pieces of bailing wire, barbs from barbed wire and staples. In one section of a specimen for biopsy Dr. Mills found tetanus bacilli.

The Giraffe

Somebody said someone was poisoning the giraffe. Did you ever stop to think how much poison it would take to kill a giraffe? I did not believe it. So with hammer, saw, crowbar and maul, I made a postmortem examination of a giraffe. The stomach revealed nothing. Then a dumb flunkie yelled, "Doc, he got it in the neck." I had forgotten about the hemorrhage. I had just returned from the Mayo Clinic where there had been talk about esophageal varicosities. So on and up we went on the esophageal highway and found nothing.

The Death of the Ubangi Chieftain

From the Belgian Congo came the Chieftain of the Tribe of the Big Lips with his twelve wives, whose underlips contained a wooden disk the size of a meat platter. The disk was placed there in early childhood and replaced with increasing sizes as the age advanced. The objective—to make the women so repulsive that warriors from other tribes would not lead them into captivity. The Chieftain was a handsome specimen of the colored blood. The tsetse fly, malaria, syphilis and intestinal parasites had played no part in his development. He must have been one of nature's favored children. Acute mastoiditis laid him low at the Crile Clinic. Apparently everything had healed, but there was pus following the fascial planes of the neck. It was obligatory that a neck dissection be done. He had a blood stream infection. All we had at that time was the intravenous injection of mercurochrome. No sulfonamides or penicillin.

The hospital sounded like a duck pond when the twelve wives came to visit their Chief. The quack, quack, quack of the wooden disks in their lower lips was heard throughout the halls. They were like a happy crowd of children. The Chieftain with all his dignity and poise felt a presentiment that his days were numbered. He began preparation for his last safari. Each morning he faced the east with the top sheet of his bedding draped over his head. A low chant was heard. Not a muscular movement could be observed. At eventide, at the setting of the sun, he faced the west and repeated the same maneuvers. In a few days, his ability to stand was at an end. With sheet about his head, he sat in a chair, and with the thump, thump, bump of his naked heels upon the floor in symphonic timing with his chant of death, the Ubangi Chieftain returned to the Spirit Land of the Congo.

Pineapple Avenue.

Seventy-Sixth Annual Convention
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Comments on Diverticula of the Gastrointestinal Tract

Gerard Raap, M.D.
MIAMI

In this paper, it is not the purpose to give a didactic survey of diverticulosis and diverticulitis, but rather to discuss the common and rare sites for which diverticula have predilection, their relative frequency and the problems both in diagnosis and therapy with which we as clinicians and radiologists have to deal. Allow me then the privilege of a few paragraphs of generalization which I think are the meat of this essay, followed by a classification of these diverticula, and then I shall show slides demonstrating the problems with which my associates and I have had personal experiences.

Diverticula occur anywhere along the entire intestinal tract or, in ordinary parlance, they occur wherever you find them. I am convinced that many are missed even though we as radiologists have tried to set up a routine of examination which purposes to give us the maximum in information. This statement is based upon the fact that many of the cases which we have been able to prove usually presented the evidence not on the first examination, but upon resurvey of what was thought to be a problem case.

It gives me satisfaction to be able to digress for a moment in stating that this observation illustrates what we radiologists have for a long time tried to emphasize to you as referring clinicians. There is a fairly large percentage of cases in which we survey the gastrointestinal tract and after eliminating certain major possibilities, we do not have a clearcut diagnosis to offer in explanation of a patient's symptoms.

I am reminded of a personal incident in which I found that at certain speeds there was a "foreign" noise under my automobile hood. After three visits to my mechanic, without results, I became somewhat irritated and asked why he could not find the cause of trouble. Yes, I had paid for new spark plugs, a new muffler and several gaskets and other things, but the offending noise still persisted. And then the mechanic turned to me and said, "Well, Doc, we're doing the same thing you doctors do, just practicing!" And so we, too, must in many cases ask for indulgence while we sort the chaff from the wheat in our findings.

And here is a clinical illustration which brings out several points along the line of this generalization.

Report of Case

Mr. W. W., aged 76, had been in good health throughout life. Recently, he had experienced pain along the left costal margin which at times was sufficient to cause vomiting. His physician, a cardiologist, stated that in his initial cardiac survey he found nothing, but still realized that the pain could be of cardiac origin. In a routine gastrointestinal survey we were asked to pay particular attention to the possibility of hiatal hernia as a cause for symptoms. The patient was complaining of pain on his initial roentgen examination, and after ruling out hiatal hernia we noted a peculiar filling defect and tenderness together with a palpable mass which seemed to arise in the midthird of the stomach on the greater curve. The obvious suspicion was that of malignant disease of the left upper quadrant. The following day he returned stating that the pain was gone. As he had had food in the meantime, we were in no position to repeat the examination of the stomach. The colon and diaphragm showed nothing. We frankly stated that although we suspected gastric malignant disease, we could not explain these changes in symptomatology and asked for a recheck when convenient. Upon re-examination, the stomach appeared normal, but in the jejunum there was a peculiar split in the course of the barium column which intrigued us, and so after talking about horses for a while we made additional roentgenograms and found a huge diverticulum of the jejunum. This explained the mass, the filling defect, the pain which left suddenly and the reason we did not discover it in our first examination.

General Observations

Let me emphasize then, first, that you will find diverticula more easily when the pain is absent, and then filling is often only transient.

The second general observation is that with an esophageal diverticulum there may be bizarre behavior of the stomach. The symptoms vary from mere salivation to gross dysphagia and nausea and vomiting. In 1 of our cases the patient was sent in with a clinical diagnosis of ulcer. We concluded that the roentgenograms sent in from a small nearby hospital confirmed this opinion and so stated.

Read before the Florida Medical Association, Seventy-Fifth Annual Meeting, Belleair, April 13, 1949.

Esophageal symptoms were not referred to. Treatment for ulcer was unsuccessful, and on recheck in our office we observed a diverticulum. We therefore stated that the patient had both esophageal diverticulum and gastric ulcer. The surgeon to whom this patient was referred said, "When we remove the diverticulum, the ulcer will disappear too." Like doubting Thomas, we requested the privilege of a recheck after surgery and seven days after, we rechecked to find all evidence of the ulcer absent, and the patient entirely comfortable and eating all types of food.

The third item is that occasionally a single diverticulum of the colon or a single small cluster of diverticula may cause local tenderness and spasm. These can be missed in the routine examination which shows only the superior and inferior margins of the colon. It is for this reason, among others, that we routinely make a roentgenogram of the colon in what we call the frog or physiologic posture to show the other two margins of the colon in relief. In a few instances we have been able to prove the presence of these diverticula on the posterior or anterior surface, and in 1 case they were demonstrated to be exactly as depicted when cholecystectomy was performed.

The fourth observation is that constant consideration of the possible presence of diaphragmatic hiatal hernia will increase the percentage of diagnoses of diverticula of the upper portion of the stomach. It has been observed that if you can really interest your technician in trying to demonstrate hiatal hernia in every patient, you may see a number of cases of the ordinary reflux which occurs in many elderly persons, but you will also find more evidence of pathologic change in the submitted roentgenograms than you will in the most careful fluoroscopic postural manipulation. Since our interest in hiatal hernia has been enhanced, we have found at least four gastric diverticula, two of which were proved surgically. These are also shown in our slides.

The fifth generalization is illustrated by a case in which a woman was sent in for reported bleeding from the rectum or vagina and a palpable mass discovered in the rectovaginal septum which was thought to be a malignant lesion. The referring physician was so firmly convinced of his diagnosis that he did not consider the diagnosis open to question. It was the patient who so resented the thought of a malignant disease that she requested any further examination indicated. The peculiar wormlike mass palpated together with a comparative lack of induration of the vaginal wall prompted us to give a barium enema, which enabled us to demonstrate multiple diverticula.

The sixth observation is that although certain sites show diverticula more often than others, they may occur anywhere, and one should not ignore any area as an improbable site. They occur in the ileum and cecum as well as in the sigmoid colon.

The seventh point is that a barium meal will often show diverticula when a barium enema fails.

The eighth and concluding general observation is that it should never be forgotten that degenerative changes may superimpose themselves upon the inflammatory changes of diverticulitis. Because the more benign condition is the more evident, a false sense of security should not be engendered, but due care must be exercised in seeking for evidence of malignant disease when the clinical evidences present themselves.

It may be possible to find all these facts stated in the literature if a careful search be made, but since my attention has been directed to one or all of them in recent discussions of this subject, I concluded that these points, all related to one type of pathology, merit emphasis and enumeration. During the presentation of this paper illustrative slides were shown demonstrating the points emphasized. Since these numbered about forty, it would be impossible to use all these as illustrations.

908 Huntington Building.

Discussion

DR. FREDERICK K. HERPEL, West Palm Beach: Dr. Raap, in the limited time allotted to him, covered well the subject of his paper. All of us who have engaged in the practice of radiology do miss some of these diverticula on the initial examination. I have great confidence in the ability of a well trained technician to demonstrate these lesions, after we have discovered them on fluoroscopic study. For some twelve to fifteen years I have been specifically looking for evidence of hiatal hernia in all patients who undergo roentgen examination of the gastrointestinal tract, and I have been impressed with the number demonstrated. We are indebted to the cardiologists for stimulating us to pay more attention to the esophagus and the junction of the esophagus and stomach.

The Editor Invites Your Contributions On Data of Notable Interest

Toxic Effects of Tetraethylpyrophosphate: Report of a Case

Garland M. Johnson, M.D.

Fort Lauderdale

The importance of familiarity with the new insecticides and their toxic action is illustrated by a case which recently came under my observation. The report of this case follows:

Report of Case

On July 2, 1949, E. C., a 23 year old crop duster, said he had been spraying with tetraethylpyrophosphate (TEPP) and complained that his eyes hurt, the pupils were small and the vision was blurred. He said he did not feel ill otherwise except that he had been tired, felt nervous and restless, and had been unable to sleep. He had experienced no gastrointestinal symptoms and no difficulty in breathing. Because of the ocular discomfort he had been in a hospital in Georgia for a day, where the eyes had been treated with butyn and cold compresses.

On examination, the visual acuity was 20/60 in each eye, but he experienced extreme discomfort on attempting to see the chart. Near vision was Jaeger 1. Miosis was extreme, and tension felt low. A faint conjunctival pinkness was noted, but no ciliary injection. Extraocular motions caused great discomfort, but were normal. The corneas and media were clear; there were no aqueous flare and no cells in the anterior chamber. Because of the extreme miosis I had difficulty seeing the fundus, but I was certain there was no pathologic change there. I was convinced that he had no iritis and no conjunctivitis. He presented the picture of a patient undergoing treatment for glaucoma.

My first thought was to drop atropine in the eyes. Since the vision was already blurred, I hesitated to confuse the picture by an atropine blurr. I reasoned that this must be a systemic rather than local poisoning, since he had been crop-dusting. So I considered giving him atropine intramuscularly or intravenously, but this therapy seemed drastic. Since he only complained of ocular discomfort, I considered dropping homatropine or paredrine in the eyes. I did not know what tetraethylpyrophosphate was, and as he had been riding in a car all night to come down from Georgia and it was then 6:30 a.m., I advised him to go to bed and try to sleep, to call me if the symptoms increased and to let me see him the next morning. That would give me time to find out about the drug with which I was dealing.

On the following morning I was prepared to treat the patient, but by that time the eyes were reported to be normal, and the patient returned to Georgia feeling well.

Discussion

When the Allies entered Germany at the close of the war, they found the Germans had developed a new series of alkyl phosphate insecticides with nicotine-like action. Hexaethyltetraphosphate (HETP) was used under the name of bladan, but tetraethylpyrophosphate is the active ingredient and is used in this country under the name of nifas and vapotone XX.

Read at the Southwest Medical District Meeting, Sebring, Oct. 27, 1949.

Tetraethylpyrophosphate $(C_2H_5)_4P_2O_7$ is a colorless liquid miscible with water, acetone, alcohol, glycerine and propylene glycol. It rapidly becomes unstable in water, but remains stable in lipids. It is hygroscopic and is readily hydrolyzed to inert diethyl acid phosphate. It has a low boiling point, and its low vapor tension makes it suitable for a spray for crop-dusting.

Goodman and Gilman[12] stated:

> The parasympathetic or craniosacral outflow consists of three outflows of preganglionic fibers from the central nervous system and their postganglionic connections. The regions of central origin are the midbrain, medulla oblongata and sacral part of the spinal cord. The midbrain or tectal outflow consists of fibers arising in the Edinger-Westphal nucleus of the third cranial nerves and going to the ciliary ganglion in the orbit. The medullary outflow comprises the parasympathetic components in the seventh, ninth and tenth cranial nerves. The fibers in the facial nerve form the chorda tympani, which innervates the ganglia lying on the submaxillary and sublingual glands. They also form the vidian nerve and innervate the sphenopalatine ganglion. The glossopharyngeal autonomic components innervate the otic ganglion. From these peripheral ganglia, postganglionic parasympathetic fibers originate which supply the sphincter of the iris, the ciliary muscle and salivary, lacrimal and mucous glands. The vagus nerves arise in the medulla and consist of preganglionic fibers which do not synapse until they reach the many small ganglia lying directly on or in the viscera of the thorax and abdomen. The vagus also carries afferent fibers from the viscera into the medulla.
>
> The sacral outflow consists of axones which arise from cells in the second, third and fourth segments of the sacral cord and form the preganglionic fibers to the pelvic nerves. They synapse in terminal ganglia near the bladder, rectum and sexual organs. The vagus and sacral outflows provide motor secretory and vasodilator fibers to all the thoracic, abdominal and pelvic organs.

Loewi in 1921 established chemical mediation of nerve impulses and called the substance vagusstoff, which has been shown to be similar to, if not identical with, acetylcholine. Preganglionic fibers stimulate ganglionic cells through release of acetylcholine at the synapse. Acetylcholine is the chemical mediator released from postganglionic parasympathetic fibers. Acetylcholine exists in the tissues in a form which is physiologically inactive, nondiffusible and susceptible of destruction by cholinesterase. A nerve impulse changes the acetylcholine from inactive to active diffusible form,

which is then hydrolyzed by cholinesterase to the inactive form of choline and acetic acid.

Cholinesterase is a ferment which is found in the plasma and in the erythrocytes and is present in tissues, especially where acetylcholine is liberated. The enzyme is present in all nerve fibers, but is concentrated at the synaptic regions and localized at the neuronal surface. Tetraethylpyrophosphate is an anticholinesterase like diisopropyl fluorophosphate (DEP). It irreversibly destroys cholinesterase as does DFP. Eserine and prostigmine inhibit cholinesterase temporarily. Thus if DFP or TEPP is given followed by eserine or prostigmine, the action is potentiated. If eserine or prostigmine has been given and is followed by DFP or TEPP, the action of the latter is inhibited because the cholinesterase is temporarily inactivated and cannot be destroyed by DFP or TEPP; so their action is rendered ineffective.

Tetraethylpyrophosphate is similar to diisopropyl fluorophosphate, which has been used in the treatment of glaucoma. Cogan, Dunphy and Grant[5] used TEPP in a series of cases of glaucoma and found it satisfactory, resulting in miosis and lowering of intraocular tension. They concluded that it has no advantages over DFP since the duration of action of DFP is seven days or more and of TEPP twenty-four to forty-eight hours. Both drugs cause ciliary spasm, of which my patient complained with lens fixed for near vision (false myopia). DFP, used in less frequent dosage than pilocarpine or eserine and effective when these drugs fail, appears to be the drug of choice for aphakia.

TEPP appears to be the drug of choice in the treatment of myasthenia gravis. This disease, the cause of which is unknown, is due to alteration in physical chemical changes that initiate muscular contraction. The acetylcholine is prevented from exerting its normal effect. This result could occur because of a decrease in the amount of acetylcholine, or an increase in the cholinesterase. It may be due to inadequate synthesis of acetylcholine or antagonistic curare-like substance. Prostigmine combines with and inactivates cholinesterase and has lengthened the life of the myasthenia gravis patient and made him useful. But the effect of prostigmine lasts one to several hours, and symptoms of weakness and difficulty in breathing and swallowing recur usually before the next dosage is administered. Tetraethylpyrophosphate can be given in doses of 8 to 15 mg. daily in two or three divided doses, and relief of symptoms is better sustained than with prostigmine. The therapeutic dose and toxic amounts are within a narrow range, 0.5 to 3.0 mg., and the patient must be watched and regulated like the diabetic patient.

Tetraethylpyrophosphate is readily absorbed through the skin, through the mucous membranes of the conjunctiva and intestinal tract, or by inhalation. Therapeutically, it can be taken by mouth as a 2 to 5 per cent solution in propylene glycol. This solution is dissolved in water, but must be swallowed immediately as it rapidly hydrolyzes. It may be given by intramuscular injection in a 5 per cent solution in propylene glycol. Tetraethylpyrophosphate is powerful and dangerous and highly toxic to warm-blooded animals. The toxic symptoms are miosis, lowering of intraocular tension, ciliary muscle spasm with spasm of accommodation with the lens fixed for near vision, striated muscle fasciculations, increased gastrointestinal tone with abdominal cramps, diarrhea, nausea, vomiting, perspiration, lacrimation, salivation, restlessness, bradycardia, cardiospasm, complete auriculoventricular dissociation, constriction of bronchial muscles, increased secretion of bronchial glands, and convulsive seizures that may be epileptiform. The antidote is atropine, dropped in the eye for miosis or given intravenously for severe systemic poisoning, 0.6 mg. to be repeated up to 2.0 mg. until dilatation of the pupil takes place. Immediate action should be taken in the treatment of the severe systemic poisoning because death can occur rapidly, usually from the bronchial constriction (asthma) but also from central stimulation followed by depression, or from stimulation followed by depression of striate muscles, or from excessive stimulation of autonomic effector cells.

The mechanism of death from Jamaica ginger poisoning in the prohibition era is the same as the causes of death owing to tetraethylpyrophosphate. The first effect on striate muscles is fasciculations of the tongue, which spread to other muscles. Muscle weakness in the legs may be followed by paralysis. This muscle weakness may persist after other functions have returned. If death does not occur in twenty-four hours, the patient will likely recover.

The United States Department of Agriculture reports TEPP to be effective against aphids, mites, leaf hoppers, thrips and caterpillars. It rapidly loses its toxicity on standing in the presence of moisture; so it must be mixed fresh before using. TEPP has been applied to 133 plant species

with injury only to certain species of chrysanthemums and tomatoes, in which it causes spotting of the leaves. This is almost eliminated if the temperature is 70° to 74° F.

Summary

A case is reported describing the toxic effect of tetraethylpyrophosphate (TEPP) on the eyes. The drug and its actions are discussed.

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414 Blount Building

Discussion

Dr. Howard V. Weems, Sebring: It is most fitting that a paper should be presented at this time on this subject; this agent, best known as Parathion, is used on apples, pears, peaches, plums, grapes, ornamental shrubbery and nursery stock, carrots, celery, peppers, potatoes, tomatoes and, most important of all to the South, citrus and tobacco. A number of cases of poisoning and a few deaths have been reported among persons using parathion as a spray. The packages come with a label telling of the dangers and urging great care in its use. The label also tells that atropine is the chief drug used in the treatment should poisoning occur. Oxygen is also of value, but atropine is given in doses of 1/60 of a grain and may be repeated in this dosage every hour for several doses.

On Aug. 23, 1949, I treated a man for poisoning, who recovered in less than one day. The same man was treated for the same cause on September 17. At this time he died within a few hours in spite of strenuous treatment.

I would urge that all physicians familiarize themselves with this product, parathion, and with the treatment for poisoning by it.

Dr. Wilson T. Sowder, Jacksonville: Doctor Johnson's paper is timely. Only a few days ago, Mr. Frank Holland, representing the Agricultural Research Institute of Lakeland, called on me at the State Board of Health. He said that all the agencies concerned with agriculture including insecticide manufacturers and distributors are anxious that the latest information about the newer chemical insecticides be brought to the attention of the physicians of the state as rapidly as possible.

Since the discovery of DDT, a great many new insecticides have been put on the market and some of these are exceptionally efficient in their action on insect pests. Unfortunately, the ones that are most effective also are highly poisonous to humans if they are not used with proper precautions, and some deaths have occurred from their use. He said that there was little hope that the use of such insecticides would be discontinued because of these dangers, since they are important to agriculture. In one instance at least they have saved a whole industry, the tobacco industry, from ruin. He said it is the opinion of the agricultural interest that there is no more logic in stopping the use of such poisons because of their dangers to humans than there would be in stopping the use of gas or electricity for heating purposes because deaths from their misuse occasionally occur. He was most anxious to secure the cooperation of the medical profession in disseminating information as to the precautions necessary and also the first aid treatment procedures indicated in the case of poisoning.

It is my understanding that one of the most useful and efficient insecticides now in use is parathion. The first aid treatment for poisoning by this agent consists in the injection of atropine and in some cases administration of oxygen. The State Board of Health is attempting to disseminate information about these insecticides. I should like to urge physicians practicing in agricultural areas to familiarize themselves with the insecticides being used in their area.

Mr. Holland can be of assistance to these physicians in getting the latest information from the manufacturers as to the chemical makeup of these agents, and as to their pharmacology and toxicology. The State Board of Health also has a great deal of information on this subject which we will be glad to send to anyone who is interested.

Dr. Johnson, concluding: I wish to thank Dr. Sowder and Dr. Weems for their discussion. It is certainly important for the doctors to be familiar with the new insecticides, because immediate treatment may save a life. In the case of my patient, the action of the drug was gone by the next morning and no treatment was given. If I had known the actions of tetraethylpyrophosphate I could have given him immediate relief from the ocular symptoms.

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Clinical Application of Electrocardiography

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The wide publicity which is being given to organic heart disease in the press and popular magazines has undoubtedly served a useful purpose in bringing many potential cardiac patients under proper management by their physicians. Many of the patients will have no clinical or laboratory evidences of organic heart disease. Others will give a doubtful history of a possible myocardial infarction, with physical findings which may be suggestive of this condition. In this group, the interpretation of the electrocardiogram will usually be the deciding factor in making a diagnosis. In view of the major role of the interpretation of the electrocardiogram in determining whether the patient may continue his normal activities, or be under the severe physical restrictions entailed in the management of such a disease, it is imperative that the examining physician have a sound and basic knowledge of what constitutes unequivocal electrocardiographic evidence of myocardial infarction.

It is extremely important that such a diagnosis in doubtful cases should not be made on one tracing which may show only slight T wave inversion, minimal displacement of the RS-T segment, and slurring of the QRS complexes. In these cases there should be further clinical and electrocardiographic studies, until a definite decision can be made. To ignore this precaution is to create cardiac neurotics of healthy persons. This also applies in a large measure to other electrocardiographic abnormalities when an electrocardiographic diagnosis is substituted for a clinical diagnosis of the underlying pathologic process responsible for the electrocardiographic findings. As an aid to avoiding some of the pitfalls in electrocardiographic interpretation, as practiced by the clinician, a short review of the subject is presented, with a brief explanation of the basic reasons involved.

In 1929 Dr. Frank N. Wilson began to use the multiple precordial leads. Since that time he and his associates,[1-4] as well as many other investigators, have repeatedly demonstrated the clinical value of the multiple precordial leads and the unipolar limb leads, utilizing the central terminal as the indifferent electrode. Methods of investigation, the facts obtained, and the conclusions drawn are all set forth in scientifically detailed articles on the subject by the investigators mentioned. The use of the multiple precordial leads and the unipolar limb leads as advocated by Wilson and his associates is especially valuable in cases of bundle branch block, ventricular hypertrophy and myocardial infarctions. It is particularly in these conditions that the standard limb leads have proved inadequate. The purpose of this article is again to direct attention to the additional information that may be obtained by the use of the unipolar limb leads and the Wilson precordial leads in comparison with that gained from the use of the standard limb leads only. While it is understood that a basic knowledge of electrocardiography is essential for its proper understanding, an attempt to simplify the explanations will be made without reference to the more involved principles, laws and experimental proofs of statements made. This attempt to simplify the discussion is in no way to be interpreted as overlooking the value of the highly scientific investigator's work, but rather to stimulate more widespread clinical use of these important findings.

To fail to make use of the detailed electrocardiographic information by the procedure herein advised is to neglect a valuable aid in obtaining the full value in electrocardiography. Today, approximately eight years have passed since this information has been made available for clinical use. Yet, many competent physicians interested in cardiology have neglected to use these new methods, as advocated by the American Heart Association, and continue to use only two or three precordial leads, and to substitute the left foot as the indifferent electrode, completely ignoring the value of the central terminal. It is difficult to understand how some otherwise intelligent cardiologists should persist in using the single precordial lead and calling it lead IV, as though it were com-

parable in all respects to the standard limb leads. The use of leads CF_4, CF_5, and CF_2, while helpful in many cases, actually gives far less information than the recommended six precordial leads which allow adequate comparison of the potential variations between the right and left side of the heart. Use of the central terminal enables the indifferent electrode to be very close to zero potential as it acts as an artificial ground. The term "unipolar" is used to designate leads of this kind in which one electrode is almost completely indifferent, and the term "bipolar" to designate leads like the standard limb leads in which the two electrodes are approximately equidistant from the heart and can be expected to undergo potential variations of about equal magnitude. The use of the foot as the indifferent electrode, as in CF leads, is much less accurate as the foot has its own potential variations, which are derived from the heart and which obscure the potential variations recorded by the exploring electrode. Use of the central terminal, then, enables the exploring electrode to record the potential variations of the underlying heart muscle without any significant interference from the indifferent electrode.

The standard limb leads and unipolar limb leads are directly related. The relationships have been expressed in mathematical equations.[5a] It is readily recognized, however, that VL minus VR equals lead I; that VF minus VR equals lead II; that VF minus VL equals lead III. Thus, in considering unipolar limb leads and the standard leads, if one has the values for any of the two leads, he can easily compute the remaining four. Unipolar limb leads from the right arm, the left arm and the left leg reflect the potential variations of that particular surface of the heart which faces that particular extremity. This transmission of potential variation from the epicardial surface towards a particular extremity depends in turn upon the position of the heart in the chest. The potential variations of the right arm are normally of the same general nature, that is, conspicuously negative during the greater part of the QRS interval. Minor variations of a slight positive deflection at the beginning or end, or both at the beginning and the end, are, however, occasionally encountered. The clinical significance of these minor variations which occur in a normal heart has been explained by Myers and Klein[6] and Goldberger[7] as due to the rotation of the heart about its various axes.

Goldberger[7] modified the original Wilson method of obtaining unipolar limb leads by removing the connection of the limb to which the exploring electrode is attached from the central terminal. The tracings obtained by the Goldberger method are identical with those obtained by the Wilson method, except for a 50 per cent increase in voltage in the former method. Use of the Wilson method by increasing the sensitivity of the string gives tracings identical in contour and voltage to those of the Goldberger method. The explanation given for this negative potential in the right arm lead is that it is due to a referral of the negative potential of the endocardial surface of the heart through the openings in the heart which admit the great vessels and face toward the right shoulder. Variations in potential in the left arm and left leg change with the position of the electrical axis of the heart. When the left ventricle faces toward the left shoulder, the greater electrical effect in activation of the heart muscle from endocardial to epicardial surfaces is toward the left shoulder, and positive potential of the left shoulder results. Similarly, when the left ventricle faces toward the left foot, a markedly positive potential will be recorded in the foot under normal circumstances. Thus, when the left epicardial surface of the left ventricle faces toward the left shoulder, VL is similar to V_6 and lead I. The heart is therefore in a horizontal position. Similarly, if the epicardial surface of the left ventricle faces toward the left leg, then VF resembles V_5 and lead III, and the position of the heart is vertical. Wilson and his associates introduced this method of determining the electrocardiographic position of the heart, depending upon the degree of rotation around its anteroposterior axis, describing six positions ranging from a horizontal to a vertical position. The electrocardiographic position of the heart is determined by the spacial relations of the two ventricles, their muscle masses and order of depolarization and repolarization in regard to the three limbs concerned. In a normal heart, the precordial electrocardiogram has essentially the same form regardless of the electrocardiographic position of the heart.

It is well known that activation of the heart normally occurs from the endocardial surface to the epicardial surface. The activation is immediately preceded by a wave of positive potential and leaves in its wake a negative potential. The potential variation of every part of the heart muscle

during activation acts in various directions simultaneously and contributes, in some measure, to the potential variations of an electrode placed on the precordium. The magnitude of the potential variation of the electrode is, however, great if its distance from the epicardial surface is small, and vice versa. Because of this fact, the precordial electrode is able to record the potential variations of the underlying ventricular surface which lies nearest the electrode. This makes it possible, by moving the electrode across various set points of the precordium, to determine the nature of the potential variations across the anterior surface of the ventricles. In order that the exploring electrode may record them accurately, however, there must be no interference from the indifferent electrode. To accomplish this, the central terminal is used, rather than the foot or some other point of the body surface.

The intrinsicoid deflection is the name given to the abrupt deflection of the tracing in the precordial electrocardiogram, which coincides with the activation of the heart muscle directly beneath the exploring electrode. The intrinsicoid deflection is easily identified in precordial leads. It begins at the peak of R as a sudden downward deflection and ends at the nadir of S. For clinical purpose, one may consider the peak of R as coinciding with the time of activation of the epicardial surface just beneath the exploring electrode. Actually, the end of the intrinsic deflection at the nadir of S coincides with the excitation of the subepicardial muscles.[8] It is readily recognized then that the QRS interval is divided into two phases by the intrinsicoid deflection. That part of the QRS phase which precedes the intrinsicoid deflection is attributed to cardiac muscle which entered activation before the subepicardial muscle under the exploring electrode, and that phase of the QRS complex which follows the intrinsicoid deflection must have been activated after the subepicardial muscle. Normally, the intrinsicoid deflection occurs earlier in the QRS interval in leads over the right ventricle, and later in leads over the left ventricle. This difference is attributable to the greater thickness of the left ventricular wall.

Normal conduction pathways are from the sinus node through auricular musculature to the AV node, then to the left and right bundle, and through the Purkinje fibers spread out in the subendocardial surfaces of the ventricles. It has been shown that the left side of the septum is activated slightly before the right side.[9-11] This difference is thought to be due to a small branch arising high from the left bundle. The slightly earlier activation of the left side of the septum results in an initial positivity of the subendocardial muscle in the right ventricle, as this muscle lies directly in front of the wave of positivity which always precedes activated cardiac muscle. A very short time later the septum becomes activated simultaneously from both sides, and these electric potentials tend to neutralize each other, as they are acting in opposite directions and are of approximately equal intensities. From this time on, cavities of both ventricles manifest a negative potential throughout the rest of the QRS phase, as the cardiac impulse is spreading away from the ventricular cavity; and hence they are continuously on the negative side of the boundary between the active and resting muscles.

Bundle Branch Block

Bundle branch block, whether right or left, can readily be identified by determining from the intrinsicoid deflection the time of arrival in the QRS interval of activation of the subepicardial layer of muscle lying beneath the exploring electrode.[5b,12] While a person with bundle branch block, without other signs or symptoms of heart disease, may have the same life expectancy as a similar person of the same age, it still is important clinically to determine which type of bundle branch block exists. Although both right and left bundle branch block occur in about equal frequency in some types of heart disease, right bundle branch block is much commoner in myocardial infarctions, Chagas' disease, congenital heart disease and especially in pulmonary embolism. In the last named disease, left bundle branch block is rarely, if ever, encountered. The diagnosis of bundle branch block of course necessitates demonstrating a normal conduction pathway up to the point of block and an increased QRS phase to 0.12 seconds or more in a complete block.

Left Bundle Branch Block

The diagnosis of left bundle branch block can be made when the following criteria can be demonstrated:

PRECORDIAL LEADS.—1. Late intrinsicoid deflections are present in V_6 or leads taken to the left of V_6. These leads usually show a broad-topped or bifid R wave. The intrinsicoid deflection in lead V_5 or V_6 is identified as the downward deflection at the peak of R or R′, if the latter is

present, because the subepicardial surface lying beneath these leads is activated last. The leads usually are broad-topped or show a bifid R, because of the abnormal path, and indicate two components: activation of the septum from right to left and activation of the free wall of the left ventricle from within outward.

2. No Q waves are present in leads from points to the left of the transitional zone, as the cavity of the left ventricle is initially positive. The transitional zone may be defined as the point on the precordium where the R wave becomes of greater magnitude than the S wave in the preceding lead. (Exception: when left bundle branch block is complicated by a transseptal infarction, as this may prevent the cavity of the left ventricle from becoming initially positive in the QRS phase.)

3. In leads from the right of the transitional zone, the final QRS complex is downward and broad. This configuration is due to the negative potential from activation away from the cavity of the overlying electrode, as the septum is activated from right to left, plus the continued direction of electric force from right to left as it passes through the thick lateral wall of the left ventricle. This negative deflection is more frequently preceded by a very small and narrow R, which probably represents early activation of the wall of the right ventricle.

4. The transitional zone, while subject to many normal variations, is usually between V_2 and V_3, and as a rule is displaced further to the left in this condition.

5. The T wave in V_5 or V_6 is inverted.

6. The ST segment in V_1 or V_2 may be elevated and in V_5 or V_6 depressed.

Unipolar Limb Leads.—1. Unipolar limb leads in left bundle branch block are variable, and dependent upon the electrocardiographic position of the heart.

2. In a horizontal or semihorizontal position, the QRS complexes of VL resemble lead I and V_6.

3. In a vertical position, which is rarely present in left bundle branch block, VL and lead I are similar to V_1 or V_2. In this case, from the standard limb leads alone, a diagnosis of right bundle branch block would inevitably be made.

4. In a semivertical position, VF would resemble lead I and V_6.

Standard Limb Leads.—Standard limb leads in left bundle branch block usually show a broad monophasic R in lead I, and usually a left axis deviation. The QRS complexes in lead I may vary considerably, owing to the electrocardiographic position of the heart, which makes standard leads alone unreliable for detection of the location of the bundle branch block.

Incomplete Left Bundle Branch Block.—When left bundle branch block is incomplete, it may be particularly difficult to distinguish from left ventricular hypertrophy, and the two conditions frequently coexist. In order to make a diagnosis, there must be normal conduction through the auricular muscle and AV node, and a prolonged QRS complex between 0.09 and 0.11 seconds. The precordial leads are similar in left ventricular hypertrophy and incomplete left bundle branch block, with regard to the late occurrence of the intrinsicoid deflection in the QRS phase in V_5 and V_6.

The prolongation of the QRS complex is usually less in left ventricular hypertrophy than in incomplete left bundle branch block. The late intrinsicoid deflection in V_6 is due to the abnormal pathway in the latter condition.

If a Q wave is present in leads over the left side of the precordium (V_5 and V_6), as may occur in left ventricular hypertrophy, then incomplete left bundle branch block may be excluded. A Q wave in these leads, however, does not always occur in left ventricular hypertrophy.

Earlier activation of the septum from the right side, in incomplete bundle branch block, would prevent the occurrence of a Q wave in V_6, as the left ventricular cavity would be initially positive.

Right Bundle Branch Block

In right bundle branch block, the precordial leads are approximately opposite in configuration to those observed in left bundle branch block.

Precordial Leads.—1. Leads from the right side of the precordium usually display a small initial R followed by an R′. The R represents the activation of the septum from left to right, and the R′ represents activation of the wall of the right ventricle from within outward. The peak of R′ then indicates the intrinsicoid deflection, and it falls late in the QRS interval. There may also occur a broad monophasic R deflection due to fusion of the septal and free wall of the ventricle components with notching.

2. As the precordial leads are moved towards the left precordium, the initial R increases in magnitude, and finally becomes a tall thin R wave

which may or may not be preceded by a small Q wave. The small Q wave, which may occur in V_6, is thought to be due to early septal activation from left to right. The second component or R′ deflection diminishes rapidly in size, and finally becomes a broad and shallow S in V_6.

3. The broad but shallow S in V_6 indicates activation of cardiac muscle is still occurring in another part of the heart, after activation of the cardiac muscle beneath the exploring electrode. This S then is a reflection of the negativity of the ventricular cavity, due to late activation of the free wall of the right ventricle. The early R in V_6 indicates that no delay exists in transmission through the left bundle branch.

4. The transition zone in right bundle branch block is usually shifted to the right, between V_1 and V_2.

5. V_1 usually shows an inverted T wave.

UNIPOLAR LIMB LEADS.—These leads show, as a rule, the VL lead similar to lead I, and a conspicuous S wave. The VR lead usually shows a late broad R.

In many cases of an increased QRS interval to 0.12 seconds or more, the precordial leads may show only part of the typical characteristics of either right or left bundle branch block, and cause uncertainty as to the location of the conduction defect. This condition may be brought about because of many reasons. In those cases in which the ventricular complexes of the same general type in all six precordial leads occur and no transitional zone is identified, it may be well to take additional leads to the right if a lesion in the right bundle branch is suspected, or additional leads to the left, if the left bundle branch is under suspicion. This procedure would enable one to identify the transitional zone and to compare the potential variations of the anterior surface of the right ventricle with the potential variations of the anterior surface of the left ventricle.

INCOMPLETE RIGHT BUNDLE BRANCH BLOCK.—This disease can be diagnosed more easily in unipolar precordial leads than can incomplete left bundle branch block. Unipolar precordial leads are by far the most satisfactory means of diagnosing incomplete right bundle branch block. The QRS complexes show a delay between 0.08 and 0.11 seconds, and the early and small R and the late R′ in V_1, V_2, or VE are similar to those of complete right bundle branch block, as is the broad S in V_6. An additional lead to the right of V_1 is, however, frequently helpful, demonstrating more clearly the delayed intrinsicoid deflection from the right ventricle.

In the unipolar limb leads, the configuration of VR as a rule shows a late, broad R. The standard leads are rarely diagnostic of incomplete right bundle branch block.

Ventricular Hypertrophy

It is recognized that the QRS complexes in V_1 and V_2 are derived mainly from the potential variations of the right ventricle and those QRS complexes in V_5 and V_6 are derived mainly from the underlying left ventricle.

That the right ventricle has a thinner wall than the left ventricle accounts for the small R in V_1 and V_2 and the larger R in V_5 and V_6. It is understandable then that in predominant hypertrophy of the left ventricle these normal differences in the QRS complexes will be exaggerated. That is, the R in V_1 and V_2 will be smaller, and the R in V_5 and V_6 will be larger. In right ventricular hypertrophy these normal differences will be decreased; the R in leads over the right side of the heart is taller than normal and over the left side of the heart the R is smaller. From these considerations little can be expected from the precordial leads when the increase in the masses of the two ventricles is relatively proportional.

Left Ventricular Hypertrophy

Preponderant left ventricular hypertrophy usually may be expected to show the following electrocardiographic characteristics:

1. V_1 and V_2 will show a very small R or even a QR deflection. The S or QS deflection is usually deep and broad, indicating late activity of the left ventricle and slightly increased duration in traveling a longer path through the thickened left ventricular wall.

2. The transitional zone is displaced further to the left (V_3 or V_4).

3. V_5 and V_6 show an abnormally large R, with the peak of R (the beginning of the intrinsic deflection) occurring slightly later in the QRS complexes than would normally be present. A small Q wave precedes the R in approximately 50 per cent of the cases.

4. The QRS complex is frequently increased to 0.10 seconds.

5. The T wave in lead V_4, V_5 or V_6 is often inverted.

6. The RS-T segment may be depressed in V_6.

STANDARD LIMB LEADS.—Usually the standard limb leads show left axis deviation if the heart is

in the horizontal or semihorizontal electrocardiographic position. Absence of axis deviation with large R deflections may be present when the heart is in the semivertical position. Rarely, right axis deviation occurs in vertical hearts with predominant left ventricular hypertrophy.

Unipolar Limb Leads.—These leads will show high voltage in lead VL, similar to lead I, if the heart is in a horizontal position. If the heart is vertical, similar findings are noted in VF, which is similar to standard leads II and III.

Right Ventricular Hypertrophy

Predominant right ventricular hypertrophy may be expected to show the following electrocardiographic findings:

Precordial Leads.—In general, precordial leads show opposite findings to those of left ventricular hypertrophy.

1. Abnormally large R waves, frequently preceded by a small Q wave and followed by inverted T waves are present in leads over the right precordium (V_1, VE and at times V_2).

2. In leads over the left precordium (V_5 and V_6) the R wave is small and occurs early in the QRS interval. There is no Q wave, but a relatively deep S wave is commonly noted. There tends to be a diminution in the size of the R wave in passing from the right to the left precordium.

3. The transitional zone may be shifted somewhat to the right.

Standard Limb Leads.—As a rule the standard limb leads show right axis deviation, but variations in this finding are common and depend on the electrocardiographic position of the heart. If the heart is in the semivertical position, large S waves are present in all the standard leads.

Myocardial Infarction

Animal experimentation has shown that gradual diminution of the lumen of a coronary artery is first manifested by a deep sharply inverted T wave, when unipolar direct leads are taken over the affected surface of the ventricle. Rapid retrogression occurs when the normal circulation is soon re-established. A more severe grade of myocardial ischemia results in an upward displacement of the RS-T segment and junction, and is of a reversible nature if the ischemia is of short duration. When the obstruction is sufficient to cause death of an area of cardiac muscle, a prominent Q wave results.[13] The Q wave represents a transmission of the initial negativity of the underlying ventricular cavity to the epicardial surface. If the whole thickness of the ventricular wall which lies beneath the electrode is involved, then a QS deflection may be expected; the dead muscle is incapable of responding to the excitatory impulse, but is capable of transmission of the potential of the underlying ventricular cavity, which normally remains negative through the QRS interval (exceptions as described for initial positivity of the right ventricular cavity). If the infarcted muscle is not completely transmural, as occurs in many cases, and some part of the muscle remains viable, then a small embryonic R wave may be seen as an upward notch on the descending or ascending limb of the monophasic QRS component. If remaining living muscle is subepicardial, a true R may be seen to rise above the base line, and results in a large Q followed by a small R and possibly an S deflection. One would expect to observe this type of deflection at the margins of the infarcted area. A sharply inverted T wave may also be present in these zones, because of the ischemia of this epicardial layer which increases the duration of its systole. The findings in the unipolar leads from the precordial leads are similar in form to those changes already described for direct leads from the epicardial surface.

In the human, the earliest change to occur consists of RS-T displacement. The infarcted areas are usually more extensive in the subendocardial area than in the subepicardial side. A thin layer of muscle beneath the endocardium, however, usually survives, possibly because of direct diffusion of oxygen from the ventricular cavity, the collateral flow through the thebesian veins and the rich arteriolar anastomosis of the subendocardial plexus. This thin layer of uninjured muscle may account for the more common upward displacement of the RS-T segment. Animal experimentation shows that a downward RS-T segment displacement would be expected when there is more extensive damage in the subendocardial area than in the subepicardial area.

Bayley[14] believed downward displacement of the RS-T segment may be due to vascular spasm of the subendocardial plexus. The RS-T segment tends to return to normal, but may persist a variable time from hours to weeks. Its tendency to regress may be taken as a favorable sign of recovery, and a prolonged RS-T displacement in myocardial infarction is considered unfavorable.

If the displacement becomes more pronounced, or returns after regression has occurred, it may be

considered on the basis of a pericarditis or extension of the infarcted area. If it is caused by the latter, then further changes in the Q waves may be expected in a larger number of precordial leads, if the infarction is anterior.

The Q waves present in anterior infarctions may also occur early. They are usually permanent, though they do show regressive changes at a later date, as a rule.

Changes in the T wave consist in a terminal inversion, which may take two to three weeks to develop fully. The inversion of the T may occur at the same time as the QRS changes, may have a tendency to regress slowly, and may or may not disappear completely.

In the posterior type of myocardial infarction there is usually a downward displacement of the RS-T segment for reasons previously described in unipolar precordial leads. In this type of infarction involving the posterior wall, the precordial leads have not the diagnostic value as in the anterior lesions. Esophageal leads, however, are of definite value. Along with the downward displacement of the RS-T segment, the precordial leads may show abnormally large R and T waves. The abnormally large R wave may be explained by the absence of electric forces acting opposite to those passing through the anterior wall of the ventricle; the lack of effect of the former augments the effect of the latter.

It has been shown that the potential variations of the epicardial surface are transmitted to adjacent parts of the body facing this surface. This observation also applies to infarcted regions of the heart. In infarctions of the anterior wall of the left ventricle there is transmission to the precordium; infarctions of the anterolateral wall are transmitted, in addition, to the left arm. In infarctions of the posterior wall, transmission is usually to the left leg as the posterior wall lies on the diaphragm and faces that extremity. There is, however, also transmission to the back and the ventricular levels of the esophagus. The findings of a definite Q wave in VL may reflect the myocardial infarction when it is located in the anterolateral wall of the left ventricle, and similar changes in lead I. A Q wave in VF may reflect a posterior myocardial infarction, and also be in leads II and III. If the infarction is high on the posterior wall, no significant changes may occur in VF. To locate accurately the infarcted area, it is obvious that other leads may be necessary in addition to the six precordial leads.

Bundle Branch Block in the Presence of Myocardial Infarction

In precordial leads it has been shown that the electrocardiographic changes in bundle branch block are due mainly to changes in the potential of the ventricular cavities early in the QRS phase, as well as to delayed activation of the wall of the ventricle, as represented by the late intrinsicoid deflection. In uncomplicated right bundle branch block, the cavity of the right ventricle shows an initial positivity, which is greater and more lasting than normal. In uncomplicated left bundle branch block, the normal, short, initial positivity of the right ventricular cavity is not present, and there occurs a definite, initial positivity in the left ventricular cavity.

It has also been demonstrated that the electrocardiographic changes in uncomplicated anterior myocardial infarction are due mainly to involvement of the wall of the left ventricle or septum. In the precordial leads this change is represented chiefly by an initial negative deflection, the Q wave, which represents the transmitted early negativity of the cavity through the infarcted area.

In left bundle branch block with myocardial infarction, not involving the septum, the cavity of the left ventricle remains initially positive in the QRS phase. This positivity is transmitted through the infarcted area to the epicardial surface. Thus, precordial leads in anterior myocardial infarction, complicated by a true left bundle branch block, cannot result in a Q wave, and such leads are of little diagnostic value in this condition.

In transseptal infarctions when left bundle branch block is present, the precordial leads may show a large QS deflection, as the potential variation of the left ventricular cavity would not be significantly altered. The QS waves in leads over the right ventricle in a condition of left bundle branch block, plus infarction of the wall of the right ventricle, would be expected; and this type of deflection is common in these leads in uncomplicated left bundle branch block; hence they are of little diagnostic value for the presence of infarction.

In right bundle branch block complicated by anterior myocardial infarction, V_1 and V_2 usually show an absence of the initial small R. There is a definite Q, followed by a tall R, which occurs late in the QRS phase. The Q represents the negativity of the left ventricular cavity, which is transmitted by the infarcted area to the epicardial surface. The tall R is due to delayed activation

of the wall of the right ventricle. The Q wave also occurs at points further to the left. The standard limb leads rarely show changes diagnostic of infarction.

In posterior infarction plus right bundle branch block, the precordial leads are not diagnostic of infarction, as they are similar to those of uncomplicated right bundle branch block. The standard leads II and III and lead VF show a definite Q wave in most instances.

Summary

Electrocardiography, when properly understood, can be utilized by the clinician as one of the most accurate of the many diagnostic methods. Its misuse can cause a great source of error and confusion. It should be emphasized that electrocardiographic abnormalities are not diseases. The intelligent use of the electrocardiogram requires its proper interpretation in conjunction with a careful history, physical examination and fluoroscopic studies, in order to determine the underlying pathologic process which is to be treated.

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Reliability of Serologic Examinations As Performed in Medical Laboratories in Florida

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The national serologic evaluation is an annual event. Each spring some 300 to 400 blood specimens collected from normal and known syphilitic donors are distributed to all state laboratories by the Venereal Disease Research Laboratory of the Public Health Service. The same specimens are examined in "control laboratories" by author serologists, for example, by Dr. Reuben Kahn in Ann Arbor, Mich. The findings are assembled, multigraphed and sent to all participating laboratories. Each can measure its own reliability by comparison of findings with those of the control laboratory; also, the relative reliability of each test is indicated by a comparison of serologic and clinical findings. These evaluations have had a major role in progressively improving the quality of serologic work in state laboratories. The privilege of participating is limited to one laboratory per state; in Florida, this is the Jacksonville laboratory of the State Board of Health. Its performance has placed it consistently among the best of the forty-eight state laboratories.

More than 100 laboratories in Florida perform serologic examinations. Within the past year it

became practicable to make available to these, on a wholly voluntary basis, the stimulating experience of serologic evaluations. In part, this was meeting an obligation, since the laws relative to premarital and prepartum serologic tests require that the State Board of Health approve laboratories for the performance of these tests. The only reasonable basis for this approval is an adequate measurement of quality of performance.

The following evaluation procedures were employed. Blood from serologically similar cases, or serum from identical pools, was submitted to participating laboratories for examination. The specimens were sent in lots of ten or twelve at one time. Identical specimens were submitted to Dr. Kahn and to the Venereal Disease Research Laboratory of the Public Health Service, and a set was retained for the Board of Health laboratory in Jacksonville. These three were the "control laboratories." All findings by control and participating laboratories were reported to the Bureau of Laboratories in Jacksonville. The comparability of test results was measured by a scoring schedule. Full scores indicated agreement with the control laboratories; the lower the score, the wider the divergence from this. On each specimen examined the participating laboratory received a full record of the serologic findings by the control laboratories, plus a brief clinical note on the donor whose specimen was tested. These were attached to a scored copy of the laboratories own finding. Thus agreements and degrees of divergence were clearly evident. The total scores provided a measure of relative reliability of performances.

Specimens were distributed in three series, in November, in January and in May. The maximum number of specimens per series was 48. The findings for each laboratory in each series and by each test procedure were evaluated. Some laboratories entered the evaluation late and therefore examined only their first or first two series. The test most commonly employed was the Kahn, followed by the Mazzini, V.D.R.L., Eagle, Kline and Kolmer tests. The most recently described test, the V.D.R.L., (V. D. Research Laboratory), in which antigen containing cardiolipin is used, gave highly satisfactory results and is being adopted by an increasing number of laboratories. With multiple tests performed in several laboratories, a total of 152 test results was reported by the 105 laboratories which examined at least one series of specimens. Among these 105 laboratories were six regional State Board of Health laboratories and eight operated by the Army, Navy or Veterans Administration. Fewer laboratories examined the second and third series with a corresponding reduction in test results reported as shown in table 1.

The quality of serologic performance was classified according to scores attained as excellent (score percentage 90 or more), satisfactory (score 80 to 89) and poor to highly unreliable (scores from 79 to as low as 47). The first series revealed the general pre-evaluation quality of serologic examinations (table 1). The findings were almost equally divided, one third excellent, one third satisfactory and the remainder poor to highly unreliable. There was moderate improvement in the results of the second series and decided improvement in the third. In the latter, two thirds of the findings were "excellent," while the number with poor to unreliable test results had declined to 6 per cent.

The major factor in attaining the degree of improvement indicated was the stimulus provided by the evaluations. There was, however, a concurrent series of conferences on serology with guest teachers provided through the United States Public Health Service. The needs emphasized were for an antigen of a proper level of sensitivity, for exact adherence to described technics and judgment acquired through experience in reading test results. Copies of standard test procedures were provided to all laboratories. Furthermore, the assistance of Miss Carolyn Roth, Chief Serologist, Board of Health, was made available to help in detecting and correcting defects in participating laboratories which requested aid. Some laboratories decided spontaneously to discontinue serologic examinations, since their evaluation results revealed performance less than satisfactory. The experience to date indicates that, guided by serologic evaluations, laboratories desiring to do so can perform satisfactory to excellent serologic tests.

This program of evaluation, instruction and consultation is to be continued. With such great improvement in performance, it is anticipated that most laboratories which regularly check their work in serology by evaluation specimens will have excellent performance and others, though less reliable, will still have reasonably satisfactory performance. In expecting "excellence" in reliability in serologic tests of other laboratories, the Board of Health is asking only the quality of performance which has been and will continue to be provided by in its own central and regional laboratories.

Table 1.—Findings by Serologic Evaluations in Medical Laboratories in Florida

Quality of Performance	First Series		Second Series		Third Series	
	Number*	Per Cent	Number	Per Cent	Number	Per Cent
Excellent	46	30	42	34	73	67
Satisfactory	55	36	56	45	30	27
Poor to highly unreliable	51	34	27	21	6	6
Total	152	100	125	100	109	100

*Test results reported. Findings by different tests reported by one laboratory are tabulated separately.

Approval for the performance of premarital and prepartum serologic tests may be accepted as assurance that the laboratory has participated in the serologic evaluation and demonstrated satisfactory competence. Lists of such laboratories have been submitted to county judges and will be revised annually on the basis of evaluations during the preceding year.

Methods which have proved so effective in improving the quality of performance in serologic work could, with advantage, be applied to other technical procedures.

Box 210

ABSTRACTS OF MEDICAL ARTICLES

THE VITAMIN K TOLERANCE TEST. By Paul N. Unger, M.D., Murray Weiner, M.D., and Shepard Shapiro, M.D. Am. J. Clin. Path. 18:835-851 (Nov.) 1948.

A continuation of previous studies demonstrating that the prothrombin time following large doses of vitamin K may be utilized as a liver function test of high sensitivity, this investigation was extended to include also some determinations of concurrent variations in the fibrinogen concentration of the plasma. On 123 persons, 132 vitamin K tolerance tests were made. The procedure is described and the results tabulated in detail, showing comparative results with other liver function tests and comparison of this and the other tests with findings in biopsy of the liver, at operation and at autopsy.

In summary, a standardized vitamin K tolerance test was used for estimating hepatic function with resulting excellent correlation with clinical and histologic findings. The vitamin K tolerance test was demonstrated to be a sensitive indicator of the functional state of the liver. Use of this procedure as a "scout" test for the detection of impairment of the liver is proposed.

UNTOWARD REACTIONS AND CUTANEOUS TESTING IN PENICILLIN THERAPY. By Joseph Farrington, M.D., Kathleen Riley, M.D., and Sidney Olansky, M.D. South. M. J. 41: 614-619 (July) 1948.

A practical clinical classification of the recognized types of dermatoses and other manifestations of hypersensitivity or toxicity which may be associated with penicillin therapy is presented. Some of the salient features of these reactions are discussed. Cutaneous testing is also discussed, and a table is presented which may be regarded as suggestive or corroborative but never conclusive in determining the causal role of penicillin in the altered reactivity encountered. The authors state that cutaneous testing should not be done haphazardly or indiscriminately; the time, site, concentration of the antigen and type of test employed should in each case be suited to the shock organ involved. Also, the value of cutaneous testing should not be overemphasized. In their experience, when properly done and interpreted, mucocutaneous testing proved helpful in about 24 per cent of the cases as a preadministration precaution or in the management of reactions of hypersensitivity.

AN EVALUATION OF 354 CONSECUTIVE HYSTERECTOMIES PERFORMED AT THE ORANGE MEMORIAL HOSPITAL. By Charles J. Collins, M.D. Am. J. Obst. & Gynec. 57:438-447 (March) 1949.

In view of considerable publicity given recently to the topic of unnecessary operations, Dr. Collins personally reviewed and analyzed the hospital case records of 354 consecutive hysterectomies, performed by seven members of the gynecologic and fourteen of the surgical staff of the Orange Memorial Hospital, Orlando. These 354 hysterectomies consisted of 120 total, 34 per cent, 163 subtotal, 46 per cent, and 71 vaginal types, 35 per cent. The greatest number of cases, 140, or 40 per cent, occurred in the age group 40 to 49 years. There were 167 hysterectomies, 46 per cent, performed in women under 40 years of age. The gynecologic service was responsible for 232, 65.5 per cent, of these cases and the surgical service 122, 34.5 per cent. There were two deaths in the series, a mortality incidence of 0.7 per cent in the abdominal hysterectomies and 0.56 per cent in the whole group. Both of these deaths were due to pulmonary emboli in the subtotal operations.

Ten patients, 2.8 per cent, had no preoperative symptoms. Abnormal bleeding was the chief complaint of 148 patients, 41.8 per cent, and 308, 87 per cent, complained of bleeding and/or pain and mass in the abdomen. Fibroids were discovered 205 times, 57.9 per cent, in the pelvic examinations prior to operation. In only 2 cases, 0.6 per cent, were normal pelves reported. The preoperative findings appeared grossly to indicate operation in all but 5 cases, 1.4 per cent. Fibroids were found in 205 of the removed uteri, 57.9 per cent, by the pathologist. The uteri removed abdominally were reported normal (including cervicitis and pregnancy) 22 times, 7.7 per cent. Pregnancy or retained products were reported in 15 cases, 5.3 per cent. Of the 15 cases showing pregnancy or retained products on pathologic examination, 8 were recognized preoperatively and 7 were unrecognized. Hysterectomy is judged to have been indicated in 9 of these cases and not indicated in 6.

The clinical diagnosis was confirmed by the pathologist in 237 of the 283 abdominal hysterectomies, 83.7 per cent, and not confirmed in 46 cases, 16.3 per cent. In 235 cases confirmed by the pathologist, 83.3 per cent, the hysterectomy is considered justified, and in 16 of the unconfirmed cases, 5.7 per cent. Based on the 283 abdominal hysterectomies, the removal of the uterus is considered justifiable in 251 cases, 89 per cent, and unjustifiable in 32, 11 per cent. In 3 of the total 354 cases, 0.8 per cent, the type of hysterectomy is judged misused.

From this study it is concluded that hysterectomy has been employed too liberaly in the past, in the younger group of patients at the Orange Memorial Hospital, and that the incidence of 11 per cent unjustified operations is too high and should be reduced, but from the low rate of preoperative pelvic findings, 1.4 per cent, in which the operation was not grossly indicated and from the confirmatory pathologic support of the clinical diagnosis in 83.7 per cent of the cases, the abuse of the hysterectomy operation in this particular hospital is not conceded.

EOSINOPHILIC PLEURAL EFFUSION AND PERICARDITIS WITH EFFUSION IN AN ALLERGIC SUBJECT (REPORT OF A CASE TREATED WITH PYRIBENZAMINE). By Nelson Zivitz, M.D., and Julius A. Oshlag, M.D. J. Allergy 20:136-143 (March) 1949.

A hyperergic or allergic mechanism may produce a clinical picture, identical with that usually associated with degenerative processes, infections, or toxic agents in diseases of the heart, lungs and blood vessels. Accordingly, a case is reported which exemplifies the occurrence of arrhythmia, pneumonitis, and pericarditis and pleuritis with effusions in a patient whose asthma disappeared on onset, was absent during the sixty days of the illness and reappeared after recovery. Other significant features were 80 per cent eosinophils in the cell count of the pleural fluid, failure of reaction to the antibiotics, absence of proof of viral etiology, and recovery coincidental with the administration of large doses of pyribenzamine.

The authors stated that whether the recovery was spontaneous or resulted from the use of this antihistamine drug is not known. To their knowledge this is the first report of a case in which an attempt was made, with apparent success, to utilize the antihistamine drugs in therapy in such a case. These features, they concluded, with other clinical data discussed, even without pathologic findings or the reproduction of the clinical picture by a specific agent, seem sufficient to warrant adding this case to the accumulating literature illustrating a hyperergic etiology of cardiovascular disease.

CHRONIC SECRETORY OTITIS. By Walter T. Hotchkiss, M.D. South. M. J. 41:727-732 (Aug.) 1948.

Dr. Hotchkiss discusses a type of deafness caused by chronic secretory otitis or otitis serosa, and bases his observations on about 30 such cases in his practice in the past six years which, in spite of repeated myringotomy, have lasted from six months to three and a half years. He describes the symptoms, which are exactly the same as those of the acute form of the disease, and also the diagnostic procedure and the search for contributing causes. Allergy and nasal, tubal and pharyngeal disease were present in a goodly number of cases.

In conclusion, he emphasizes three points: In opaque drums diagnostic inflations are often necessary and are of great value. In a diagnostic inflation the usual signs of bubbles or moisture are often not heard, and the so-called choked inflation is of great diagnostic significance. There is the possibility that permanent perforation may be the method of choice in carefully selected cases.

CHRONIC INTESTINAL INTUSSUSCEPTION IN THE ADULT. By J. W. Snyder, M.D. South. M. J. 41:586-591 (July) 1948.

Dr. Snyder discusses intussusception as it occurs in the adult. In contrast to intussusceptions of infancy and childhood, which constitute real emergencies, intussusception in the adult is characterized by indefinite abdominal discomfort and illness extending over a considerable period of time. While it may be idiopathic in origin, as is usually the case in infancy, it is more often associated with some form of tumor, diverticulum or ulcer. Symptoms may be absent, especially if the tumor is small and the invagination nonobstructive, but they tend to be vague with signs of mild recurrent obstruction associated with symptoms of the prime causative factor. Abdominal colic appears, especially after meals, with slight nausea and with relief after the passing of gas or a stool. In diagnosis, final conclusions are often reached only after roentgen examination. Treatment is entirely surgical, and the type of operation should fit the condition encountered.

A case is reported which illustrates some of the problems and difficulties encountered in the diagnosis and treatment of this condition in the adult. It is observed that although this anomaly presents a highly interesting problem, its solution is beset with pitfalls, including many errors both of commission and omission.

THE INFLUENCE OF SUPRADIAPHRAGMATIC SPLANCHNICECTOMY ON THE HEART IN HYPERTENSION. By Emil M. Isberg, M.D., and Max M. Peet, M.D. Am. Heart J. 35:567-583 (April) 1948.

These authors present a study of the prolonged effects of splanchnicectomy on the heart in hypertension. Observations regarding the cardiac aspects in 384 patients with arterial hypertension, exclusive of malignant hypertension, treated surgically by the operation of bilateral supradiaphragmatic splanchnicectomy and lower dorsal sympathetic ganglionectomy, led to the conclusion that this therapy may have been beneficial in a significant percentage of hypertensive patients.

Five to twelve years after splanchnicectomy, 60 per cent of patients with hypertensive heart disease and 93 per cent of hypertensive patients with normal hearts were living. It was concluded that patients whose electrocardiograms show inverted T waves in both leads I and II, or both definite left axis deviation and abnormal T waves, have a 50 per cent chance for prolonged survival following this operation. Five years or more postoperatively, significant improvement was evident in the tracings of 41 per cent of the patients still alive whose preoperative electrocardiograms were abnormal. In practically all patients showing improvement in electrocardiogram or decrease in heart size, a significant reduction in blood pressure was maintained. One half the hypertensive patients in whom an enlarged heart was demonstrated did not survive five to twelve years.

Anginal seizures were frequently relieved following splanchnicectomy. Of patients with gallop rhythm prior to operation, 23.3 per cent survived five years or more. There is one chance in three of prolonged survival following operation for the hypertensive patient in congestive heart failure which requires digitalization preparatory to splanchnicectomy. Of 11 hypertensive patients who had had a coronary occlusion prior to splanchnic resection, 8 were living five to nine years postoperatively. This operation was, however, of no avail when pronounced cardiac enlargement with a variation greater than 50 per cent of predicted normal for frontal area or transverse diameter was present. Also, it was of little benefit to the patient with paroxysmal nocturnal dyspnea, for only 12.5 per cent survived five years or more.

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*SPECIAL ASSIGNMENT

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*SPECIAL ASSIGNMENT
1. Industrial Health

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(Terms expire Dec. 31, 1950)
Louis M. Orr, II, M.D., Delegate.....*Orlando*
Joshua C. Dickinson, M.D., Alternate.....*Tampa*
(Terms expire Dec. 31, 1951)

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Shaler Richardson, M.D., 1946.....*Jacksonville*
William C. Thomas, M.D., 1947.....*Gainesville*
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Make Reservations Early

Hollywood Beach Hotel

Seventy-Sixth

Annual Convention

Hollywood,

April 23-26, 1950

Eighteen scientific papers have been selected to be presented at the annual convention in Hollywood, April 23-26. Each essayist has been notified by Dr. Frederick K. Herpel, Chairman, Scientific Work Committee. Dr. Herpel and members of his committee, Drs. James R. Boulware, Jr., Jere W. Annis, Lakeland; James L. Borland, Jacksonville, spent Sunday, December 4 in Orlando examining the papers submitted for presentation. Stewart Thompson and Ernest Gibson were present also.

Arrangements for the annual meeting in Hollywood were continued on Sunday, December 11, as Dr. Stewart Thompson and Harold Parham spent the entire day at Hollywood conferring with hotel officials and Cabinet Chairman of Local Committees, Dr. Lloyd U. Lumpkin.

Dr. Walter C. Payne, President, on numerous occasions has spent an entire day at the Association's headquarters office since the beginning of his administration. His most recent visit was on Monday, December 5.

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P. O. BOX 1018 JACKSONVILLE, FLORIDA

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Britain's Health Program Presented at University of Florida

Sir James Stirling Ross, former high ranking officer of the British Ministry of Health, appeared on the University of Florida lecture series at the auditorium of the Students' Union Building on the night of November 21, 1949. The public was invited to hear him.

A kindly, elderly man of small stature, Sir James has ruddy cheeks and an attractive Scotch accent. He began his talk by saying that his chief concern and interest were that the people of the United States be well informed concerning the National Health Service in Great Britain. He readily admitted that there were real difficulties involved in the service, but he stated that those difficulties were chiefly administrative. While this wrong or that wrong might exist, such wrongs, he contended, were isolated examples; otherwise, the House of Commons would be ringing with complaints. He called attention to the manner in which isolated facts can be used and abused in controversy and asked that the trivial be put aside in order to consider the over-all plan.

In his attempt to explain what the service is, he told why and by whom it was established, taking the audience back to 1907, and then gave a brief history of its progress through the years. He quoted Winston Churchill's statement in 1943 that all people should have equal opportunities to share in medical discoveries and advances, quoted the Oxford survey of 1945 which set forth the dreadful conditions due to mass evacuation of England's cities, and paid high tribute to leaders in the medical profession of Great Britain.

This distinguished Briton, credited with having personally played an important part in bringing Britain's health program into being, stated that in spite of all the difficulties the "practical working" of the plan is satisfactory. He averred that 95 per cent of England's Doctors of Medicine are cooperating, that the patient has freedom to choose his own physician and that the doctor-patient relationship is being preserved.

He admitted that there are four difficult problems involved: (1) overload of work on the family doctor; (2) delay in building health centers due to the economic blitz; (3) scarcity of nurses (an estimated 35,000 short); and (4) the problems of economy.

The high cost of the plan, he maintained, is due to the hospitals having been blasted during the war, to the increase in cost of care and operation in general, and to the unprecedented demand for dentistry and "spectacles." He asserted that there is no ceiling to the amount which can be spent—that it is necessary to see what a country can afford. He referred to the "new mandate" which has resulted from social and industrial sources and causes, and pointed to the revolutionary change in care for the "aged chronics." He affirmed confidently and declared positively that many of these chronics should never have been chronics at all.

Sir James closed his talk in fervent voice as he decried the term geriatrics and extoled the beauty of the word "eugenia." The chairman of the pro-

gram then made it clear to the audience that this was no debate, but questions were allowed

In reply to a question as to why the physicians of the United States are so opposed to this plan if the physicians of Great Britain are so well in accord with it, the speaker quoted Tennyson with somewhat doubtful effect and with no very apparent good point. Replying to a question which involved the efficiency and effectiveness of the plan, he dealt first in platitudes and then stated simply that an attempt is being made to improve the system and correct its shortcomings. While he was trying to answer a question which had to do with deficit spending, Sir James' voice seemed temporarily to take on a staccato-like quality, his thoughts seemed to become somewhat more remote, and his already ruddy complexion appeared to grow even ruddier.

There were several physicians in the audience, mostly from Gainesville, who wisely refrained from asking questions, lest they seem to enter debate. Most of them shared the impression that Sir James is a kind, conscientious, misinformed man. Many questions could have been asked, of course, which it would have been embarrassing to answer adequately: How can a sick person get an adequate medical study? How can the neurotics and malingerers be controlled? What is the attitude of the great middle class toward their new, so-called security? How can a government promise security to its commonwealth when that government is going broke?

A pertinent question which occurred to one or two was: Who is paying Sir James' expenses for this lecture tour? It seems unlikely that England, in its present financial plight, is spreading the gospel to America at its own expense. Is it our tax money that is footing the bill?

Here seems a fertile ground in which the medical profession may sow its thoughts and principles —the minds of our college students. Perhaps the American Medical Association will want to send lecturers to colleges throughout our country.

1950 Preview

No one was surprised to have President Truman declare late in November, after conferring of course with Federal Security Administrator Oscar Ewing, that his controversial Fair Deal health insurance program will be offered to the new session of the Congress convening this month and will be fought to a finish. Mr. Ewing is satisfied that the health program is a political asset and is reported to have a special interest in its effect in New York, where he is said to hope to run for Governor this year.

Following the President's announcement, the Federal Security Administrator served notice not only that a stiff fight for the health insurance plan was contemplated but also that he was leaving for an on-the-spot study of Britain's health plan and Sweden's social security setup. While abroad, he planned to study the health programs of other nations as well so that everything possible can be gained from their experience with the problem. He is expected to return prepared to talk back when members of the Congress cite experiences detrimental to his pet scheme. The President is reported to have urged him to take plenty of time to familiarize himself with the situation, particularly in Britain. Doubtless Mr. Ewing will not extend his travels—at the taxpayers' expense, of course—to New Zealand, where the populace has just ousted the Labor government after fourteen years and has turned to the Conservatives for redress of its bureaucratic ills.

So the outpourings from the Federal Security Administrator and his cohorts will undoubtedly be more of the same with even greater emphasis. For many months now their glorification of a socialized medicine system here in the United States might well be mere transcribed recordings of what the British leaders told the British voters and persuaded them to buy in 1945. All the historically tragic experience with socialized medicine has been brushed off by them, as by the British leaders, as mere poppycock. Those who even casually studied what they were proposing in Britain warned that it could not work. And it has not.

Yet off goes Mr. Ewing to study a system deeply in the red and one that would have folded up long ago except for the American taxpayers' dollars. Despite the wholesale demonstration of failure, our government adheres tenaciously to the same pattern and would force it upon us. Britain's plight today could be a preview of happenings on this side of the Atlantic if the Administration has its way.

When United States Senator Walter F. George of Georgia, a staunch opponent of socialized medicine, visited Florida recently, he said the best way to prevent America from becoming a welfare state is to have a stronger government in Washington. "A much stronger government would put us on

the right course in a short length of time," he remarked. His prescription for a stronger government is the election of strong men to office, with the average citizen giving more thought to voting and to the choice of candidates for political office.

This would seem to be particularly good advice to physicians, who have come face to face with a grave political problem whether they would or not and who must face up to their political responsibility. Administration supporters do not minimize the influence of doctors with legislatures and the Congress. They bank heavily, however, on doctors having less influence with the 60,000,000 American families having incomes of $5,000 a year or less who cannot afford a serious illness but can vote.

The 1949 Epidemic of Investigations F. M. A. Headquarters Visited

Action of the Antitrust Division of the United States Department of Justice in suddenly "investigating" the American Medical Association, state and county medical societies affiliated with it, and other medical organizations made strange medical history during the year now ended. More than a score of these medical groups scattered throughout the nation were the victims of this epidemic of investigations.

The activities of the Federal Bureau of Investigation in searching the files of medical societies and medical service plans elicited a prompt and forthright statement from the Board of Trustees of the American Medical Association "protesting the use of a police arm of the Government" in this way. This public statement is published in full in the Journal of the American Medical Association for October 15, 1949. With this pronouncement every member of the medical profession will wish to be thoroughly familiar.

The office of the Florida Medical Association in Jacksonville was visited by the local representative of the F. B. I. on September 26, 1949, and the information sought was duly given by the proper officials. This inquiry and the numerous other "investigations" now form a significant part of the record for 1949. What do they portend for 1950 and for the future of medicine? It is perhaps too early to comment, but every member of the Association is free to draw his own conclusions.

Rural Health Conference February 3 and 4

The Committee on Rural Health of the American Medical Association announces the next annual conference on Rural Health for February 3 and 4, 1950, in Kansas City. A conference of state chairmen will precede the meeting, opening on the afternoon of February 2 and continuing through a dinner meeting.

Five discussion subjects dealing with the problem of action at the local level have been selected for the panel sessions. These panel study subjects are: (1) rural medical facilities at the local level; (2) relation of agricultural extension service to rural health problems; (3) community responsibility for health service in rural areas; (4) methods of prepayment for health services in rural areas; and (5) the responsibility of the medical schools in the rural health program.

American Academy of General Practice 1950 Scientific Assembly

On February 20, 21, 22 and 23 the American Academy of General Practice will hold its second Scientific Assembly in St. Louis. The Kiel Auditorium will be headquarters for the meeting, and the scientific sessions will be held in the Opera House of the Auditorium. The excellent facilities available will make possible a greater number of exhibits, both technical and scientific, than last year and of the same high quality.

The American Academy of General Practice is the only national scientific organization in the country formed by and for general practitioners of medicine and surgery. Founded only two years ago, it now has a membership of well over 10,000 and has constituent chapters in most states. The first Scientific Assembly, held in Cincinnati in March of last year, was an overwhelming success, with a final registration of 3,529. A great precedent was established, and the 1950 Scientific Assembly is expected to be an even more outstanding success.

General practitioners who are members of the American Medical Association are invited to register. Further information may be obtained from Mr. Mac F. Cahal, Executive Secretary, American Academy of General Practice, 406 W. Thirty-Fourth St., Kansas City 2, Mo.

A. M. A. Washington Representative Visits Florida

Dr. Frank E. Wilson, Deputy Director of the Washington, D. C., Office of the American Medical Association, recently visited representative groups of medical societies in Florida to establish liaison between the American Medical Association and the state medical societies. He found that the physicians of Florida are well aware of legislation on health matters. Beginning his tour of the state in Pensacola, he spent November 23 there, was in Tampa the next two days, visited Miami from the twenty-fifth through the thirtieth and stopped in Jacksonville on December 1.

YOUR BLUE SHIELD

New Blue Shield—Blue Cross Contracts

New contracts providing increased benefits under the Florida Blue Shield and Blue Cross Plans are now being offered to all present members of the plans, as well as to new groups at the time of enrolment, for issuance on and after Jan. 1, 1950. These new contracts will be called the Blue Shield —Blue Cross "Series 7" Contracts.

Benefits Under New Blue Shield Contract

For the first time since the organization of the Blue Shield Plan, in-hospital medical care will be provided. Commencing on the fourth day of a hospital stay for nonsurgical cases, an allowance of up to $5 a day will be paid to a participating physician in charge of the case for each day a visit is made. These payments will extend for twenty-eight days in each contract year. Thus, the maximum in-hospital medical benefits payable in any one contract year will be $140 per person for each member included in the subscriber's contract.

The present Blue Shield Schedule of Benefits, which was revised a year ago with many changes upward in benefit payments, will remain in force.

Waiting periods under the new Blue Shield contract are: nine months for maternity care (previously ten months), and no waiting period for tonsillectomies and adenoidectomies (previously three months).

In addition to medical, surgical and obstetric care, Blue Shield members, when hospital in-patients, are entitled to the following additional benefits rendered by a participating physician not in charge of the case: anesthesia services, up to $10 each hospital admission; pathologic services when in connection with surgery, up to $7.50 each hospital admission; and x-ray service (not including therapy) when in connection with surgery, up to $15 each hospital admission.

Blue Shield benefits covered outside of the hospital are: minor surgery, and x-ray services for suspected acute fractures and dislocations.

It should be noted that the present Blue Shield contract will not be entirely replaced by the new contract. Present members are being given the opportunity to convert their coverage immediately if they so desire, or on the anniversary dates of the groups through which they are enroled. New members will be issued the new contract at the time they are enroled. Undoubtedly some of your patients will be holders of the present Blue Shield contract.

In order to make it as easy as possible for you and your secretary to determine the benefits to which your Blue Shield patients are entitled, holders of the new contract will present to you identification cards entirely different in appearance and size from the identification cards for present benefits. These new cards, when unfolded, are three times larger than the cards now in use, and contain much helpful information for the contract holder. Subscribers who have not converted their coverage will continue to receive benefits under the present Blue Shield contract.

Benefits Under New Blue Cross Contract

The new Blue Cross contract provides the following benefits: room allowance now up to $7 a day; antibiotics, up to $10 each hospital admission; electrocardiograms, up to $10 each hospital admission; basal metabolism tests, up to $10 each hospital admission; electroencephalograms, up to $10 each hospital admission; diathermy and physiotherapy, up to $10 each hospital admission; oxygen therapy allowance now unlimited (previously covered up to $25); full payment for use of operating room, laboratory examinations (except pathology, which is covered under Blue Shield), drugs and medicines, solutions and dressings; x-ray (not including therapy), up to $15 each hospital admission; administration of anesthesia by hospital employee, up to $10 each hospital admission; anesthesia supplies to outside M.D. anesthetist, no limit; transfusion setup, up to $10 each hospital admission; maternity care (under family contract), benefits as outlined up to $75; and emergency room service (within twenty-four hours of accident), up to $5.

The waiting period for maternity care has been reduced from ten to nine months. Hospital care for tuberculous and mental conditions is now covered for thirty-one days during the life of the contract (previously covered for seven days each contract year).

ANNUAL CONVENTION

HOLLYWOOD

April 23-26, 1950

HEADQUARTERS:

Hollywood Beach Hotel

Make your reservations early

BIRTHS, MARRIAGES AND DEATHS

Births

Dr. and Mrs. Morton M. Halpern of Miami announce the birth of a son, Jon J., on Oct. 17, 1949.

Dr. and Mrs. Lawrence G. Hebel of Palatka announce the birth of a daughter, Gail Suzette, on Nov. 6, 1949.

Dr. and Mrs. Paul F. Hutchins of Jacksonville announce the birth of a son, Paul Francis, Jr., on Nov. 5, 1949.

Dr. and Mrs. Jackson L. Allgood, Jr., of Jacksonville announce the birth of a son on Nov. 22, 1949.

Dr. and Mrs. Harry Needelman of Miami Beach announce the birth of a daughter, Felicia Linda, on Nov. 4, 1949.

Dr. and Mrs. Ralph Robbins of Miami Beach announce the birth of a son, Christopher, on Oct. 13, 1949.

Marriages

Dr. John A. Toomey of Cleveland, Ohio, and Miss Helen Toomey of Hollywood Beach were married on Oct. 28, 1949.

Dr. Hyman Merlin of Miami and Miss Ester Argintar of Miami were married on Sept. 18, 1949.

Dr. Maurice I. Edelman of Miami and Miss Josephine L. Weiss of Asheville, N. C. were married on Oct. 29, 1949.

Dr. Julio J. DePoo and Mrs. Olga Splinter Renedo, both of Miami, were married on Oct. 9, 1949.

Deaths—Members

Dr. Julius A. Oshlag, Miami Beach .....Nov. 9, 1949
Dr. Robert E. Repass, Miami .....Nov. 27, 1949

STATE NEWS ITEMS

At the Southern Medical Association's 1949 annual meeting, which was held in Cincinnati, Ohio, November 14-17, forty-five members of the Florida Medical Association registered. They were Drs. Alan Brown and William G. Mason, Clearwater; Allen E. Kuester, Cocoa; Charles R. Burbacher, Coral Gables; James R. Nieder, Delray Beach; William D. Wells, Ft. Lauderdale; H. Quillian Jones, Ft. Myers; George A. Dame, Fernandina; William C. Thomas, Gainesville; Redden L. Miller, Graceville; Joseph M. Burton, Homestead; George P. Beach, Sullivan G. Bedell, James L. Boriand, Clarence D. Rollins and Wilson T. Sowder, Jacksonville; Jere W. Annis and Marion W. Hester, Lakeland; James L. Anderson, M. Jay Flipse, Thomas S. Gowin, William M. Howdon, Leslie M. Jenkins, Walter C. Jones, Donald F. Marion, John D. Milton, E. Sterling Nichol, Benjamin G. Oren, J. Randolph Perdue, Gerard Raap, Donald W. Smith, Joseph S. Stewart, Richard F. Stover and Herbert W. Virgin, Jr., Miami; Chas. J. Collins and Robert L. Tolle, Orlando; Arthur J. Butt, Jr., Mayhew W. Dodson and Wilton E. Tugwell, Pensacola; Charles E. Aucremann, St. Petersburg; Chadbourne A. Andrews, Jas. L. Estes, Chas. McC. Gray, Frank T. Linz and Douglas D. Martin, Tampa.

The fifth annual meeting of the Southeastern Allergy Association has been scheduled for the Columbia Hotel, Columbia, S. C. on Saturday and Sunday, Feb. 11-12, 1950. Guest speakers will be Jonathan Forman, president of the American College of Allergists and Dr. Theodore Squire, president-elect of the American Academy of Allergy. Panel discussions will include one on "Pediatric Allergy" and one on "Office Procedure."

Dr. Frank G. Slaughter of Jacksonville was the guest speaker at an open meeting sponsored by the Woman's Auxiliary to the Pinellas County Medical Society in St. Petersburg on November 15. Dr. Slaughter's subject dealt with the importance of doctors in community and civic life.

FOR SALE OR LEASE: Active general practice and building. Worth looking into. P. O. Box 2346—Daytona Beach, Fla.

Dr. Gordon H. Ira of Jacksonville was the guest speaker at the November meeting of the Woman's Auxiliary to the Duval County Medical Society. Dr. Ira spoke on the education program for the Auxiliary.

Dr. Arthur J. Butt, Jr., of Pensacola addressed the recent meeting of the Southern Medical Association in Cincinnati, Ohio, on the subject of prevention and treatment of kidney complications resulting from sulfa drugs.

Dr. Edward Canipelli of Jacksonville addressed the Knights of Columbus on public health at a November meeting held in Jacksonville.

Dr. John H. Tanous of Miami Beach recently addressed the pre-medical students at the University of Miami.

Dr. Hugh A. Carithers of Jacksonville attended the quarterly meeting of the Florida Children's Commission in West Palm Beach in November.

Dr. Bruce Cominole of Daytona Beach was the featured speaker at the local Lion's Club recently. He discussed the probable harm done by fear of cancer.

Dr. Ashbel C. Williams of Jacksonville has been elected state president of the American Cancer Society, and chairman of the executive committee for the state of Florida.

The New Orleans Graduate Medical Assembly is sponsoring a post-clinical tour to San Juan, Puerto Rico to follow the 1950 annual meeting scheduled for New Orleans, March 6-9. The party will travel by airplane and the planned itinerary also includes the Virgin Islands; Ciudad Trujillo, Dominican Republic; Kingston and Montego Bay, Jamaica and Havana.

Medical programs and visits to hospitals have been arranged. Departure will be from New Orleans Saturday, March 11 to return on Sunday, March 26. For further information, write to the office of the Assembly, Room 105, 1430 Tulane Avenue, New Orleans 12, Louisiana.

Drs. E. Frank McCall, Samuel R. Norris, Irving J. Strumpf and Max Suter, all of Jacksonville, have been invited to lecture at the Obstetric Seminar in Augusta, Georgia, December 12-16.

Drs. F. Hardy Bowen, Samuel M. Day, Jr., and Leonard M. Moe, all of Jacksonville, attended the convention of the Seaboard Airline Railroad Surgeons held in Havana, Cuba in November. Dr. Day presented a paper to the group on "The Management of Severe Burns."

Dr. George A. Dame of Fernandina has been certified as a diplomate in the Founders Group by the American Board of Preventive Medicine and Public Health.

Dr. Nathan Weil of Jacksonville was the guest speaker at the November meeting of the Stephens College Alumni Club in Jacksonville.

Dr. Joseph L. Selden, Jr., of Ft. Myers was honored as the guest speaker at the November Parent Teacher's Association meeting in that city. Dr. Selden spoke on the topic, "Health of Parents."

Dr. Benjamin J. Bond of Winter Haven was the principle speaker at the monthly supper meeting of The First Presbyterian Young Adults on Sunday, November 20. Dr. Bond's subject was "The Crisis of Birth."

Dr. Arthur J. Henry, Jr., of Tallahassee, addressed the local Business and Professional Women's Club at a recent meeting on the subject, "Health as a Necessity for Success."

Dr. Richard C. Cumming of Ocala was the guest speaker at the regular meeting of the Dunnellon Woman's Club, at which time he discussed community health and sanitation.

Dr. Paul G. Shell of Ft. Lauderdale recently addressed the Dania Rotary Club on the subject of cancer. Dr. Shell explained methods of treating cancer and the research that is being carried on to determine the cause of the disease.

Dr. Samuel G. Hibbs of Tampa recently participated in a program on mental health problems presented to a local group of parents, teachers and other interested adults at the Woodrow Wilson Junior High School in that city.

Dr. Roger Phillips of Orlando was the guest speaker at the regular monthly meeting of the Children's Church Study Group held at the College Park Methodist Church in that city.

Dr. John F. Lovejoy of Jacksonville has been named the new president of the local Kiwanis Club. Dr. Lovejoy previously served as secretary of this club.

COMPONENT SOCIETY NOTES

DeSoto-Hardee-Highlands-Charlotte-Glades

The November meeting of the DeSoto-Hardee-Highlands-Charlotte-Glades County Medical Society was held at Aqua Vitae Springs. Dr. Wesley W. Wilson of Tampa was the guest speaker. He presented a paper on "Angiomatous Lesions of the Skin." Members present included Drs. Harold S. Agnew, Henry P. Bevis, Godfrey L. Beaumont, Isaac W. Chandler, Hubert W. Coleman, Miles A. Collier, Merle C. Kayton, Carl J. Larsen, Gordon H. McSwain, Ruth M. Miller, Wesley S. Pyatt, Zaven M. Seron and Edwin C. Northup.

Leon-Gadsden-Liberty-Wakulla-Jefferson

The Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society has elected the officers who will serve in 1950. They are as follows: Dr. J. Lloyd Massey, President, Quincy; Dr. John T. Benbow, Vice President, Chattahoochee. Dr. Edward C. Love, Jr., Quincy, was re-elected Secretary-Treasurer. Dr. George H. Garmany and Dr. Bricey M. Rhodes, both of Tallahassee are the delegates to the Seventy-Sixth annual convention of the Florida Medical Association, with Drs. J. Lloyd Massey of Quincy and Dr. Merritt R. Clements of Tallahassee as alternates.

Marion

The Marion County Medical Society held its regular meeting at the Magnolia Lodge at Crystal River. Future meetings of the society have been scheduled at 7:30 p.m. on the third Wednesday for dinner meetings with the Woman's Auxiliary, which is presently being organized.

The following members were present: Drs. William H. Anderson, Jr., Hugh H. Barfield, K. R. Cammack, T. Hartley Davis, Bertrand F. Drake, William H. Garvin, Jr., Eaton G. Lindner, John D. Lindner, Carl S. Lytle, William J. McGovern, John N. Moore, John P. Moore, Robbins Nettles, Eugene G. Peek, Eugene G. Peek, Jr., Ralph E. Russell, E. Laurence Scott, Robert E. Thompson, Herbert M. Webb, Jr. and Jack M. Waldrep. Guests included Dr. William B. Moon, Crystal River, Dr. James Robert McCord of Ocala, formerly professor of obstetrics at Emory University School of Medicine, and Dr. Luther Alexander Brendle, new director of the Marion County Health Unit, and former director of the Knoxville, Tennessee Health Unit.

OBITUARIES

Louis Richard Marshall

Dr. Louis R. Marshall was found dead in his hotel room in Jacksonville on Oct. 25, 1949. He was 49 years of age.

Dr. Marshall was born in Cleveland, Ohio on Dec. 11, 1899. He received his premedical training at the Ohio State and Western Reserve universities. In 1926 he was graduated from Jefferson Medical College of Philadelphia and three years later obtained his license to practice medicine in Florida. His internship was taken in the Cleveland City Hospital, and later he served residencies in the Jackson Memorial Hospital, Miami, and the Episcopal Eye, Ear and Throat Hospital, Washington, D. C. In November, 1934 Dr. Marshall joined the Veterans Administration as a specialist in ophthalmology and otolaryngology. A veteran of over two years' service in World War II, he was released to inactive duty June 16, 1946 with the rank of lieutenant colonel.

Dr. Marshall was a member of the Pinellas County Medical Society, the Florida Medical Association and the American Medical Association.

William Henry Watters

Dr. William H. Watters of Coconut Grove died at his summer home in Hyannis, Mass. on Oct. 11, 1949 at the age of 73 years.

Dr. Watters was born in Searsport, Maine in 1876. After graduation from McGill University in Montreal, he attended the Boston University School of Medicine, receiving his medical degree in 1900. For twenty years he taught bacteriology

(Continued on page 443)

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Alexander Brunschwig	Memorial Hospital	Operability of cancer
Meredith F. Campbell	New York	Urology
Louis K. Diamond	Harvard Medical School	Rh factor
Arthur C. DeGraff	New York	Heart
Maxwell Finland	Harvard Medical School	New antibiotics
Richard H. Freyberg	Cornell University	Compound E in arthritis
Chevalier L. Jackson	Philadelphia	Bronchoscopy
Herbert C. Maier	Presbyterian Hospital	Chest surgery
James F. Norton	Margaret Hague Maternity Hospital	Extra peritoneal caesarean section
Eugene P. Pendergrass	Pennsylvania Hospital	X-ray
E. R. Pund	University of Georgia	Smear diagnosis of cancer
R. L. Sanders	Memphis	Biliary and peptic ulcer surgery
Albert M. Snell	Mayo Clinic	Medical treatment of gallbladder and liver
Donald H. Stubbs	George Washington University	Vascular and circulatory collapse
Walter G. Stuck	Nix Hospital	Backache
Oscar Swineford	University of Virginia	Allergy
Willard O. Thompson	Chicago	Misuse of estrogens — obesity
Richard W. TeLinde	Johns Hopkins Hospital	Cancer in situ (cervix)
Julius L. Wilson	Tulane University	Chest disease
Harold G. Wolff	Cornell University	Headache

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and pathology at his alma mater. A specialist in internal medicine, he had practiced in Coconut Grove for the past twenty-three years. At the time of his death, he was Professor Emeritus of Preventive Medicine in the Boston University School of Medicine, and in recent years he had been a board member and associated with the Department of Legal Medicine of the Harvard University Medical School.

For many years Dr. Watters was a member of the staff of St. Francis Hospital in Miami Beach and recently of the staff of Doctors Hospital. He was a member of the Florida Medical Association for twenty-four years; he was also a member of the Dade County Medical Association and a fellow of the American Medical Medical Association. He held membership in the Royal Arch Masons at Lynn, Mass., was a member of the Plymouth Congregational Church and was affiliated with a number of civic and social organizations in the Miami area.

Surviving are his widow, Mrs. Gertrude Watters, and a son, Dr. Preston H. Watters, with whom he was associated in practice in Coconut Grove; and a daughter, Mrs. Willard Hollander of Swarthmore, Pa.

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SURGERY—Intensive Course in Surgical Technique, Two Weeks, starting January 23, February 20. Surgical Technique, Surgical Anatomy & Clinical Surgery, Four Weeks, starting February 6, March 6. Surgery of Colon and Rectum, One Week, starting March 6. Esophageal Surgery, One Week, starting June 5. Breast & Thyroid Surgery, One Week, starting June 26. Thoracic Surgery, One Week, starting June 12. Gallbladder Surgery, Ten Hours, starting April 24. Fractures & Traumatic Surgery, Two Weeks, starting April 17.

GYNECOLOGY—Intensive Course, Two Weeks, starting February 20. Vaginal Approach to Pelvic Surgery, One Week, starting March 6.

OBSTETRICS—Intensive Course, Two Weeks, starting March 6.

PEDIATRICS—Intensive Course, Two Weeks, starting April 3. Personal Course in Cerebral Palsy, Two Weeks, starting July 31.

MEDICINE—Intensive General Course, Two Weeks, starting April 24. Hematology, One Week, starting May 8. Gastro-Enterology, Two Weeks, starting May 15. Liver & Biliary Diseases, One Week, starting June 5. Gastroscopy, Two Weeks, starting March 6.

DERMATOLOGY—Formal Course, Two Weeks, starting May 8. Informal Clinical Course every two weeks.

UROLOGY—Intensive Course, Two Weeks, starting April 17. Cystoscopy, Ten Day Practical Course, every two weeks.

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From where I sit, different people are *always* going to respond to different things in different ways. So let's keep a friendly understanding of what other folks get out of a new hat, an old clarinet, a chocolate soda or a temperate glass of sparkling beer or ale now and then.

Joe Marsh

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Highlights of the National Fall Conference

Auxiliary Members:

It was indeed a genuine pleasure and a rare privilege you afforded when you sent me to Chicago to the National Fall Conference of the Woman's Auxiliary to the American Medical Association. It was more than inspiring to meet with the presidents and presidents-elect from practically every state in our nation, together with every national committee chairman and a majority of the national officers. The interest in Auxiliary work can well be measured by the enthusiasm of this well attended conference. There was not one dull moment throughout the whole two days, and the cordial greetings I received from the many friends I made at the convention in Atlantic City filled my heart to overflowing. I soon learned

(Continued on page 446)

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that their troubles, problems and adversities were similar to ours; so the task was ours to glean from this conference the suggestions that would help meet the needs of the present day.

Mrs. David B. Allman, our national president, in her gracious manner opened the meeting with a warm welcome. But it was Mrs. Arthur A. Herold, our president-elect, to whom we must toss the orchids. Being petite, charming and truly "deep South," she presided over the two day conference with ease, dignity and ability. She endeared herself to one and all of us, and exemplified her ability as a leader.

Throughout all of the reports and discussions of our national chairmen, certain points were emphasized by each speaker, but, in summary, they meant the same though expressed differently, namely, Education, Public Relations, Legislation and Membership.

By being better informed, we can in a more capable and efficient manner perform our duties and meet our responsibilities. We must not slacken our efforts in Public Relations; rather must we work in a more determined manner than ever. Let us always be on the alert for matters pertaining to Legislation that must be stopped or encouraged.

By Membership is meant that every doctor's wife should become a member of the Auxiliary and join in the crusade with her husband for the preservation of our "American Way of Life" and the fight to save our country from becoming a socialistic state. Strength in numbers comes from increased membership, either by organizing new auxiliaries, strengthening the membership in existing auxiliaries, or enroling members at large.

Throughout every report and lecture there was an imperative urge to do and an interweaving of the principles of the aforementioned phases of Auxiliary work, which I shall repeat for emphasis: Education, Public Relations, Legislation and Membership. Let us concentrate with all of our forces on these phases of Auxiliary work, and then our responsibilities will become privileges and a source of pleasure.

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BOOKS RECEIVED

CLINICAL INTERPRETATION OF LABORATORY TESTS. By Raymond H. Goodale, M.D. Price, $6.50. Pp. 605. Philadelphia: F. A. Davis Company, 1949.

The numerous advances in all branches of clinical pathology make it important today to have at hand an interpretative text. This working manual for the general practitioner, intern, technologist, nurse and student interprets the significance of the individual test and lists the diagnostic tests for each disease. Designed to bring together the laboratory and the clinic, the book is divided into two parts, the first entitled "Body Fluids, Excreta, and Functional Tests" and the second "Diseases with Associated Laboratory Findings."

Each disease which lends itself to laboratory diagnosis is briefly outlined and followed by a list of changes to be expected in the examinations which are given in order of importance. Diseases with associated laboratory findings are discussed according to the various systems. Among the topics fully discussed are the physiology, normal values and significance of abnormal values of the various body fluids and excreta; basal metabolic rates; liver function tests; bacteriologic, viral and mycotic examinations; skin tests; poisons; chemotherapy and antibiotic therapy in relation to bacteriology; and proper methods of preparing body fluids, excreta, and tissues for the laboratory.

CLINICAL AUDIOLOGY. By Maurice Saltzman, M.D. Price, $5.00. Pp. 195. New York: Grune & Stratton, 1949.

The audiologist as a medical specialist fills a prevailing gap in the realm of specialized service by utilizing the sciences of physics, psychophysiology and psychology in the elucidation of otologic entities. The author of this book, Dr. Maurice Saltzman, Assistant Professor of Otorhinology, Temple University School of Medicine, and a clinical otologist for twenty-five years, has excelled as a diagnostician and is a profound student of neurophysiology, psychology and physics. He is a master of his subject, and the book is written in simple and pleasant style —so states Dr. George M. Coates, Chief Editor, Archives of Otolaryngology and Professor of Otolaryngology Emeritus, University of Pennsylvania, in the introduction.

The purpose of the book is the interpretation of otologic observations in the light of the sciences of psychophysics and psychophysiology. Audiograms present characteristic features in many forms of hearing impairment. By means of graphs authentic audiometric patterns for the various types of deafness discussed in the text are established. Dr. Matthew S. Ersner, Professor and Head of the Department of Otorhinology and Rhinoplasty, Temple University School of Medicine, states in the foreword that he regards the book with its wealth of new ideas as worthy of being deemed the "pioneer textbook" of a new medical specialty, which covers so completely and concisely the fields of hearing and deafness that it should become the standard text on these subjects. He concludes: "A student of psychology will find authoritative information in it. To the physician and medical student, this book presents the proper clinical approach to the study and treatment of deafness and tinnitus. The interrelationship between audiologic phenomena and the clinical practice of internal medicine, neurology and pediatrics is particularly well brought out by the author.

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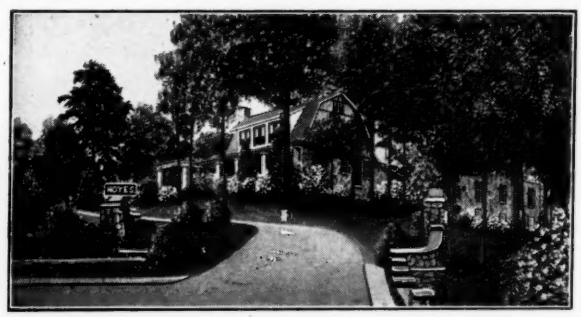

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